

ACCIDENT PREVENTION PLAN

Old American Zinc Plant Superfund Site and Surrounding Properties

St. Clair County, Illinois

IN SUPPORT OF

CONTRACT NO: W912P918D0014

TASK ORDER NUMBER: W912P919F0060

REVISION 1.1

PREPARED FOR:



**US Army Corps
of Engineers®**
St. Louis District

**Environmental & Munitions Branch (CEMVS-EC-E)
Environmental Quality Section (CEMVS EC-EQ)**
Foot of Arsenal Street
St. Louis, MO 63118

PREPARED BY:



ARDL, Inc.
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A. SIGNATURE SHEET

The following Accident Prevention Plan (APP) and Activity Hazard Analyses (AHAs) were prepared by ARDL Inc. (ARDL) for the remedial work to be performed at surrounding properties of the Old American Zinc Plant Superfund Site (OAZ). This APP is based on ARDL's company wide Accident Prevention and Safety Program and has been modified where necessary to address the specific needs of said project. If there are any conflicts contained within documents referenced in the various appendices or attachments, the ARDL project specific documents supersede all others. **All personnel will be specifically required to conform to all safety requirements as set forth in the contract specifications, USACE EM 385-1-1, OSHA, and 29 CFR 1910 and 1200 and 29 CFR 1926 for construction.**

The primary reference for this APP and AHAs is the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, 30 November 2014 Edition.

This APP was prepared by ARDL's Site Safety and Health Officer (SSHO), Mr. Chris Creps for the Remediation of the OAZ and Surrounding Properties. Mr. Creps' qualifications resume is included Appendix A for review. This APP was reviewed and approved by ARDL President, Ms. Valerie Jenkins, with plan concurrence by Mr. Rob Dismang, Senior Program Manager (SPM), and Mr. Robert Jurgiel, Corporate Safety Consultant.

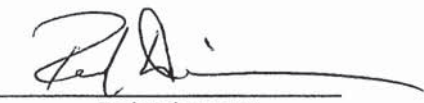
Plan review and approval by the following:

1. President:
Ms. Valerie Jenkins
(618) 244-3235
ARDL


Valerie Jenkins

Plan review and concurrence by the following:

2. Senior Program Manager:
Mr. Rob Dismang
(618) 244-3235
ARDL


Rob Dismang

3. Corporate Safety Consultant:
Mr. Robert Jurgiel
(636) 757-3060
Jurgiel & Associates


Robert Jurgiel

4. Contracting Officer's Representative:
Mr. Pedro A. Rosario-González
(314) 925-5100
USACE, St. Louis


Pedro A. Rosario-González

5. Program Manager:
Mr. Kevin Slattery
(314) 331-8206
USACE, St. Louis


Kevin Slattery

Persons authorized to obligate the company in any and all matters:

Rob Dismang
Randall Jenkins
Valerie Jenkins

B. BACKGROUND INFORMATION

- 1. Contractor:** ARDL Inc.
400 Aviation Drive
Mt. Vernon, IL 62864
- 2. Contract No.:** W912P918D0014
- 3. Project Name:** OAZ and Surrounding Properties
- 4. Project Description:**

The Work includes remediation and restoration of select portions of residential properties and alleyways with contaminated soils. The activities for this project are summarized as follows:

1. Management and coordination of all Contractors, Subcontractors, and vendor activities on site during the execution of this work.
2. Mobilization of Contractor personnel, equipment, any Subcontractors, and materials to the project site.
3. Site preparation, including preparation of storage and staging area(s). Implement endangered species and migratory bird protocols per Section 01 31 13 during site preparation, if clearing and grubbing occurs between April 1 and September 10.
4. Installing temporary facilities and controls.
5. Creation and implementation of all plans in accordance with the contract and specifications.
6. Coordination with the Owner's Representative and property owner to develop a property specific plan.
7. Coordinating utility locates and installing erosion controls at residential properties.
8. Excavation of contaminated soil from within designated yard areas and easements.
9. Transportation of contaminated soil from the residential properties to the Facility Area (FA).
10. The excavated soil in the soil staging pile will be managed in accordance with the soil erosion and sediment control plan.
11. Management of stormwater during construction.
12. Backfill of excavated areas with general backfill, topsoil, select topsoil and gravel, and associated sampling of imported material. Stockpiles of imported borrow materials at the FA will not exceed 2,000 cubic yards each.
13. If surveys are performed, they will be performed on the same x and y coordinate grid for each survey with supplemental points as necessary to capture grade changes.
14. Restoration of excavated surfaces and work areas.
15. Tree, shrub, and perennial replacement with species similar to those removed; and other vegetation if required.
16. Six-week watering and maintenance period for seed, trees, shrubs, and perennials.

During performance of this contract, the following equipment is expected to be utilized:

1. Mini Excavator - 12,000 lbs.
2. Mini Excavator - 18,000 lbs.
3. Single Axle Dump Trucks
4. Tandem Dump Trucks
5. Skid Loaders 12,000 lbs.
6. Hand Tools - shovels, rakes, etc.
7. Plate Compactors
8. D6 Bulldozer (or equivalent)
9. X-Ray Fluorescence (XRF) Testing Devices
10. Wheel Loader
11. Water Truck
12. Pickup Trucks
13. Pressure Washer
14. Smooth Drum Roller
15. Skid Loader Attachments - 1 Sweeper, 2 Graders
16. Utility Trailers
17. Stake Bed Trucks
18. Dustrak 8540 Air Monitors
19. Connex Boxes
20. Office Trailers
21. Portable Restrooms

Definable Features of Work (DFOW) will specifically be the following, as applicable:

1. Utility Locating
2. Mobilization and Site Preparation
 - Equipment delivery and facilities construction
 - Preconstruction property visit
 - Excavation limits
 - Protection of property
 - Utility locating
 - Stormwater pollution prevention plan implementation
 - Clearing, grubbing and tree, shrub, and fence removal
 - Implementation of conservation measures for protected species
3. Property Remediation
 - Soil excavation
 - Fugitive dust and noise restrictions
 - Backfilling
4. Surveying
 - Preconstruction
 - Post-excavation
 - Post-backfill
 - Legal property boundary

5. Sampling/Testing
 - Air and dust monitoring
 - Borrow source sampling and testing
 - Waste characterization (if needed)
 - Soil compaction testing
6. Waste Management
 - Transportation
 - Excavated soil staging
7. Disposal Site Restoration
 - Landscaping (tree, shrub, perennial replacement at properties)
 - Sod installation and watering
 - Fence replacement
 - Soil cover, seeding, and watering staging pile
 - Industrial Area
 - Watering
8. Demobilization

C. STATEMENT OF SAFETY AND HEALTH POLICY**1. Safety and Health Policy Statement**

The Occupational Safety and Health Act (OSHA) of 1970 clearly states our common goal of safe and healthful working conditions. The safety and health of our employees continues to be the first consideration in the operation of ARDL. Safety and health is every employee's responsibility at all levels.

ARDL will maintain a safety and health program conforming to the best management practices. To be successful, such a program must embody the proper attitudes toward injury and illness prevention not only on the part of supervisors and employees, but also between each employee and his or her co-workers. Only through such a cooperative effort can a safety program, in the best interest of all, be established and preserved.

It is the intent of ARDL to comply with all laws. To do this, we must constantly be aware of conditions in all work areas that can produce injuries. No employee is required to work at a job he or she knows is not safe or salutary. Employees' cooperation in detecting hazards and, in turn, controlling them is a condition of their employment and requires them to inform their supervisor immediately of any situation beyond their ability or authority to correct.

The personal safety and health of each employee of this company is of primary importance. The prevention of occupationally induced injuries and illnesses is of such consequence that it will be given precedence over operational productivity at all times. To the greatest degree possible, management will provide all mechanical and physical facilities required for personal safety and health in keeping with the highest standards.

Our objective is a safety and health program that will eliminate all preventable injuries and illnesses, not merely in keeping with, but surpassing, the best experience of operations similar to ours. Our goal is nothing less than zero accidents and injuries.

2. Contractor Accident Experience and Exposure Data

Per OSHA's Form 300 Log of Work-Related Injury and Illness, ARDL experienced 0 incidents in calendar year 2018. ARDL's Lost Workday Incident Rate (LWDIR) for 2018 is 0 and their Recordable Incident Rate (RIR) is 0.

ARDL's 2018 Experience Modification Rating (EMR) is 0.95. ARDL's exposure data is based on 60,800 total hours worked during the 2018 calendar year.

D. RESPONSIBILITIES AND LINES OF AUTHORITY

1. Employer's Responsibility

The President of ARDL, Valerie Jenkins, has ultimate responsibility for the implementation of ARDL's APP, including all ARDL employees, all subcontractors, all vendors, and all other visitors to the project site, and as such, will ensure the strict enforcement of the program.

2. Responsible Personnel

The Corporate Safety Consultant, Mr. Robert Jurgiel, has the responsibility for implementation of the ARDL Safety and Health Program and reports directly to Ms. Jenkins. The Corporate Safety Consultant is responsible for plan creation, training, and adherence of all ARDL employees and subcontractors to the program.

The Project Manager/Superintendent (PM/S) for this project is Mr. Mitchell Jenkins. The PM/S is responsible for ensuring that the SSHO understands the safety program and properly implements and enforces the safety program for their respective projects.

The SSHO for this project, Mr. Chris Creps, meets all applicable EM 385-1-1 requirements for the position (please refer to Appendix A for appointment letter and certifications). He is responsible for ensuring the overall safety of the jobsite. He will ensure that all ARDL employees, subcontractors, and visitors adhere to the provisions of the safety plan. In addition, every employee and subcontractor employee is accountable for the safety of their portion of the work.

The SSHO shall exercise his authority to: contact the United States Army Corps of Engineers (USACE) Contracting Officer Representative (COR) immediately and directly if needed, to convey any mishap of note, to include all Accidents, Incidents, and Near-Misses; and will, with the assistance of the PM/S and Construction Quality Control Systems Manager (CQCSM), conduct a thorough investigation of such, to include documenting all pertinent data, inclusive of the OSHA 300 Log (i.e., Contractor Accident Experience form).

To achieve the goal of ensuring the overall safety of the job site, the SSHO will have a full understanding of: the project specifications and drawings, the project APP and applicable safety reference material, the ARDL Safety Program, and the project Environmental Protection Plan (EPP), if applicable. In addition, the SSHO has enough experience, together with proper training, to be able to recognize unsafe work practices and conditions.

The SSHO is responsible for ensuring that any ARDL employee or subcontractor employee working on the project is given a full safety briefing, or indoctrination, including a review of the project APP and any AHA specific to the employees' duties. He will also ensure that visitors to the project site are given a safety briefing before being allowed on the job site. The SSHO will conduct a Daily Safety Meeting for all ARDL employees and subcontractors present to review and update safety procedures and rules.

The SSHO will schedule maintenance and safety checks on all equipment and tools used on the job site.

The SSHO will make regular inspections of all areas of the job site where work is being conducted to ensure that safe work practices are being adhered to and all aspects of the safety program are being followed and enforced. He will also ensure that any safety deficiencies are immediately corrected, including the stoppage of all work, if required, to correct the safety deficiency.

Finally, the SSHO is responsible for performing safety inspections, attending the project pre-construction conference, conducting all AHA Meetings, ensuring that each person on the project site understands this APP, and enforcing all the applicable safety rules and regulations. He will also check that all new equipment and tools brought onto the job site for a new phase of work have been properly inspected and safety checked before being put to use.

3. Safety Training and Compliance

The SSHO, and all designated Alternate SSHOs, for this project, have completed the OSHA 30 Construction Training Course. A copy of their current OSHA 30 card will be included with corresponding resumes and other training certifications in Appendix A of this document.

4. Competent/Qualified Person(s)

Competent Person(s) (CP) or Qualified Person(s) (QP) may be required for excavation, heavy equipment usage, and/or soil transportation. The SSHO will determine what activities require CP/QP and who that person is based on their training and qualifications.

5. Pre-task Safety and Health Analysis

Prior to the start of any new DFO, an AHA, or acceptable equivalent, may be required to be submitted and approved. AHAs may be developed by the field personnel performing the work, along with the assistance of the project's site management staff. Each AHA shall be reviewed and approved by the USACE COR prior to the start of work for the corresponding DFO and shall be modified, as necessary, with changing conditions, operations, or personnel.

Prior to the start of work, each worker is required to review the AHA for their DFO with the SSHO and sign the document. The current AHAs shall be readily accessible on the site by all personnel.

6. Risk Management Process

The ARDL team believes that risk is inherent in all activities of any construction project. To be successful, a risk management process is needed such that risk can be continually evaluated and managed in order to maximize safety, mitigate risks, and achieve a "zero accidents" safety record.

Risk management is a business process that includes the identification, assessment, and prioritization of risks, followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events to an acceptable level.

ARDL uses AHAs as part of its total risk management process. AHAs provide the ability to plan, identify, assess, categorize, quantify, handle, and report/track risks associated with the achievement of the project requirements and goals. ARDL strives to incorporate knowledge of "best practices" from all stakeholders and from previous construction projects.

AHAs are intended to be developed and used by the field crews/workers performing the work, with the assistance of others, such as the SSHO, PM/S, or CQCSM, as needed. Each AHA shall be reviewed and modified as necessary to address changing site conditions and/or operations. If any change made to the initial AHA increases the Risk Assessment Code (RAC), the AHA is required to be re-submitted to the USACE COR for acceptance prior to work proceeding.

7. Work Restrictions/Requirements

To ensure overall safety of the job site, no work is permitted to take place in support of construction operations without the SSHO, or designee, on-site. Furthermore, no work is permitted to take place which requires the presence of a CP/QP without the CP/QP on-site. Persons designated as CP(s)/QP(s) must provide proof of competency or qualification.

It is the responsibility of the SSHO to determine operations requiring CP/QP, if any, incorporate that requirement into the specific AHA, and verify the presence of the CP/QP during the specific operation(s).

8. **Non-compliance Policy**

ARDL has established a "Three - Strikes and You're Out" Disciplinary Action Program.

If an employee or company does not follow ARDL's APP or any other applicable Federal, State, or EM385-1-1 Safety or Health Standard or rule, they are subject to disciplinary action, including; (Step 1) a verbal violation (documented), (Step 2) a written violation, and (Step 3) another written violation that may include suspension without pay or termination from the project.

Depending upon the severity of the safety violation, the employee and /or company could be given a written violation, a suspension, or terminated immediately. A type of violation that may result in a **written violation**, skipping a verbal violation, could be failure to follow directions of the project's SSHO or causing an accident. A type of violation that may result in an **immediate suspension or termination** may be failure to wear fall protection when so instructed. The type of violation shall be determined by the Corporate Safety Consultant, the SSHO, the PM/S assigned to the project, or any other officer of ARDL.

If a safety violation is issued to either an employee or company, it shall be in writing and a copy of the form shall be given to the employee or company in violation. If the violation is committed by an employee, their employer shall be notified immediately.

There are two forms that may be used to issue a written safety violation. They include, but are not limited to, (1)"Company/Employee Disciplinary Action" form, or (2) the pocket version "Safety Notice of Violation or Unsafe Practice" form.

9. **Lines of Authority**

Safety and health in our business must be a part of every operation. Safety is the responsibility of every ARDL employee, as well as every subcontractor employee working for ARDL. It is the duty and requirement of all personnel working on this project to follow the direction of the SSHO and report any and all safety issues to the SSHO. The individual employee is responsible for knowing, understanding, following, and enforcing the company and project safety rules and regulations.

The SSHO is responsible for the overall safety of his project and is responsible for direct implementation of the project safety program and APP. The SSHO reports directly to the PM/S and must notify the PM/S and the Corporate Safety Consultant of any and all serious incidents, notices of violations, or any other situation beyond the SSHO's ability to control.

The PM/S for work during this project is Mr. Mitchell Jenkins. He is responsible for ensuring that the SSHO understands the safety program and properly implements and enforces the safety program for their respective projects. The PM/S reports directly to the SPM, Mr. Rob Dismang.

10. **Management Accountability**

ARDL requires that all employees and supervisors strictly adhere to the safety rules set forth in the Code of Safe Practices. If anyone violates a safety rule, he/she will be disciplined in accordance with the severity of the infraction. The discipline imposed will be at the sole discretion of ARDL (limited only by contractual or legal restrictions) may range from a warning, to a disciplinary suspension with pay, or up to termination (The Three Strikes and You're Out Program is discussed in Section 8). The SPM, PM/S, or the Corporate Safety Consultant imposing the discipline will be responsible for documenting it on the form included in Appendix E. A copy of the forms shall be sent to ARDL's Corporate Safety Consultant.

E. SUBCONTRACTORS AND SUPPLIERS

SUBCONTRACTORS:

Environmental Restoration
1666 Fabick Drive
St. Louis, MO 63026
636-227-7477
888-814-7477

- Utility Locating
- Mobilization and Site Preparation
- Property Remediation
- Surveying
- Disposal Site Restoration
- Demobilization

Geotechnology, Inc.
11816 Lackland Road Suite 150
St. Louis, MO 63146
314-997-7440

- Sampling and Testing

John A. Jurgiel & Associates, Inc.
123 N. Main Street
St. Charles, MO 63301
636-757-3060

- Sampling and Testing

SUPPLIERS:

Beelman Trucking
2000 Edwardsville Rd
Madison, IL 62060
618-452-8120

Petroff Trucking
3469 Rt. 111
Pontoon Beach, IL 62040
618-797-6100
618-797-6105

If subcontractor(s) will be used for the following DFOWs/activities, they are NOT known at this time, but additional information will be submitted to USACE for acceptance prior to the start of any activities listed:

- Mobilization and Site Preparation
- Property Remediation
- Waste Management
- Disposal Site Restoration

F. TRAINING**1. Site Specific Training Requirements for New Hire Orientation - Corporate Safety Indoctrination Subjects** (See Indoctrination Form in Appendix B)

All new employees will be given a copy of ARDL's APP with their new employee packet. Employees will be required to read the APP and adhere to its provisions. They will be briefed as to the location of emergency equipment and phone numbers. ARDL employees and subcontractor employees will attend the daily jobsite safety meeting conducted by the SSHO. Any additional specialized safety training will be provided as required.

The Safety Orientation topics are listed below. All employees and subcontractor employees are required to complete the safety orientation form prior to entering the jobsite.

- 100% Hard Hat Project
- Personal Protective Equipment (PPE) required. NO sneakers. Safety boots, safety glasses, gloves, high visibility clothing, and hearing protection
- Proper and adequate protective clothing. NO shorts. Shirts with sleeves/long pants at all times.
- "HORSEPLAY" will not be permitted.
- Location of Bulletin Board
- Location of emergency telephone numbers/medical facilities/treatment posted
- Location of fire extinguishers - firefighting and other emergency procedures
- Report all accidents to SSHO immediately
- Report any property damage immediately
- Location of office trailers and restrooms
- Drugs, intoxicants, ammunition, weapons, guns are **PROHIBITED**
- Understand company APP
- Observe and practice all Government safety and health requirements
- Daily housekeeping
- Vehicle parking and regulations. Parking lot speed limit of 20 MPH
- Safe clearance procedures
- Overhead safety and safety harnesses required
- Employee responsible for property/safety of others. Security of ladders, tools, unused supplies/materials

2. Mandatory Training, Certifications, and Required Periodic Re-training/Re-certifications

The following training and/or certification(s) will be required by the SSHO, Designated Competent Persons, or individuals performing tasks in support of the listed DF(s)OW prior to the start of this project. Training and/or certifications required in support of this project are:

- CPR/First Aid, 40 HAZWOPER
- Lead Awareness Training
- Site-Specific Training

General Notes for Training and New-hire Indoctrination

- The responsibility for conducting the training required by OSHA standards for any subcontractor or supplier personnel is that of the subcontractor/supplier. The subcontractors/ suppliers are required to show documentation of the training required prior to the activity in question being performed.
- The format of the training program to be used will be classroom type instruction by the SSHO.
- The elements of the training will be as follows:
 - The requirements of the OSHA Hazard Communication Standard
 - Any operations in the work area where hazardous chemicals are present.
 - Methods and observations to be used to detect the presence or release of any hazardous chemicals.
 - The physical and health hazards of the chemicals in the work area.
 - The measures employees can take to protect themselves from these hazards, including specific procedures which have been implemented to protect employees from exposure to chemicals, such as appropriate work practices, emergency procedures, and PPE to be used.
 - The details of this hazard communication program, including an explanation of the labeling system and the Safety Data Sheet (SDS) and how employees can obtain and use the appropriate hazard information.
 - Instruction on how to read a SDS.
 - Where each SDS will be located in the work area so employees can get them whenever needed using the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).
- The procedure to train new employees at the time of their initial assignment to work with a hazardous chemical, and to train employees when a new hazard is introduced into the workplace, will be the same as that stated above.

3. Site Specific Safety and Health Training for Supervisors and Employees

The SSHO is responsible for, and will conduct, pre-emergency planning and coordination with the USACE COR and local emergency service providers. The SSHO will ensure that all personnel on-site are familiar with the proper procedures to follow in the event of an emergency.

4. Emergency Response Training

Before the commencement of work, an emergency response network will be established. The SSHO will ensure that all personnel on-site are familiar with the proper procedures to follow in the event of an emergency.

Procedures & Tests

Prior to the commencement of work, the SSHO will have obtained the following information, so that it is readily available in the event of an emergency:

- Location of the nearest hospital to the work site.
- Confirm emergency telephone numbers and route to the hospital.
- Identify the locations of emergency equipment and supplies.
- Locate and identify safety, chemical, and other hazards particular to the job site.
- Maintain a "Notify in case of emergency" list for each person working on the site.
- Update emergency plans and procedures should job site conditions change.
- Emergency Numbers

G. SAFETY AND HEALTH INSPECTIONS

1. Minimum Daily Jobsite Safety and Health Inspections

The SSHO will oversee or conduct safety inspections of all work and equipment as part of his/her daily quality control inspections. Any unsafe practices or equipment will be halted immediately and will be noted in the daily report. The individual responsible for correcting the unsafe condition will be notified. The SSHO and the responsible individual will determine a course of action to correct the condition and prevent a recurrence of the condition. The results of corrective actions taken will be recorded on a follow-up inspection report form and the following daily production report form.

It is the responsibility of all trained employees and visitors on-site to follow the appropriate safety procedures regardless of whether they are ARDL employees or employees of other subcontractors, suppliers, professionals, government representatives, or government personnel. The SSHO will ensure these safety requirements are met. Subcontractors will report daily exposure data and any other safety deficiencies to the SSHO. SSHO will then include them in his daily reports.

The SSHO will administer, and track on a daily basis, the Deficiency Tracking Log to track all safety deficiencies found on the project site. All site personnel have the ability, and are required, to note all known safety deficiencies on the Deficiency Tracking Log immediately upon becoming aware of the deficiency. The SSHO will keep a log of all safety deficiencies, and track deficiencies until corrective actions have been fully implemented. The SSHO will coordinate with the PM/S and other responsible parties, including subcontractor foremen, to correct noted deficiencies as quickly as practicable. The SSHO will track corrective actions until all deficiencies have been resolved. As deficiencies are corrected, they will immediately be noted on the log. The Safety Deficiency Log will be kept at the ARDL office trailer by the SSHO at all times.

2. Required External Inspections

There will be no external safety inspections or certifications required for this project.

H. ACCIDENT REPORTING

1. Exposure Data Reporting

As required, ARDL will complete and submit updated Exposure Data, including applicable OSHA 300 Forms, to the USACE COR. Updated OSHA 300 Forms will be formally submitted annually. Additionally, updated forms will be submitted as part of any accident investigation or as otherwise requested by the Contracting Authority.

ARDL management shall be responsible for keeping a record of man-hours worked. An updated OSHA Form 300 will be submitted via Resident Management System (RMS) and will be reflected in the Injuries/Illness & Exposure Report.

2. Accident Investigations, Reports, Logs

Accident investigation is primarily a fact-finding procedure; the facts revealed are used to prevent recurrences of similar accidents in the future. The focus of accident investigation at ARDL is to prevent future accidents and injuries in order to increase the safety and health of all our employees. This standard practice instruction establishes uniform requirements to ensure that; accidents are evaluated, controls and procedures are implemented to reduce or prevent future occurrences, and that the proper hazard information is transmitted to all affected workers.

A mishap is defined as *"any unplanned, or undesired event that occurs during the course of work being performed, including accidents, incidents, and near misses"*. With no exception, employees are required to report ALL mishaps immediately to their employers and/or supervisor. The contractor shall report, thoroughly investigate, and analyze all mishaps occurring on the project. The end result of each mishap should be the implementation of corrective actions as soon as possible to prevent a re-occurrence.

a. Written program

ARDL will review and evaluate this standard practice instruction on an annual basis or when changes to this document are required. Effective implementation requires a written program for job safety and health that is endorsed and advocated by the highest level of management within this company and that outlines our goals and plans. This written program will be communicated to all required personnel. It encompasses the total workplace, regardless of number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

b. General requirements

ARDL has established accident investigation procedures and will work to improve operational procedures through the use of this document. Preventing future workplace injuries in our company is the principle purpose of accident investigation. This document will provide a basis for studying and recording the reasons an accident occurred, identifying existing or potential job hazards (both safety and health), and determining the best course of action to take to reduce or eliminate these hazards.

c. Accident investigation team composition

The accident investigation team will be composed of the following:

Accident Investigation Team	
Title	Member
Site Safety and Health Officer	Chris Creps
Project Manager/Superintendent	Mitchell Jenkins
Construction Quality Control Systems Manager	Ann Jacobs
Corporate Safety Consultant	Robert Jurgiel
Senior Program Manager	Rob Dismang
President	Valerie Jenkins

d. Accident and incident reporting requirements

It is the responsibility of the Contractor to notify OSHA within 8 hours, in accordance with 29 CFR 1904.39, if an employee(s) is fatally injured or more than one employee/person is hospitalized as a result of a single occurrence and within 24 hours for any impatient hospitalization, amputation or loss of an eye.

All injuries "*greater than first aid*" must be reported by the contractor within 24 hours after the occurrence (or 24 hours after notification by the affected employee) to the USACE COR. This applies to anytime a worker leaves the site for medical attention. The only injuries not reportable are those that receive first aid while on the jobsite.

It is important to note that no supervisor may decline to accept a report of an injury, illness, or mishap from a subordinate.

In addition to and per the requirements listed above, the contractor is required to report the following:

- Property damage in excess of \$5,000
- Days Away Injuries
- Days Away Illnesses
- Restricted/Transfer Injuries

DART (**D**ays **A**way, **R**estricted Duty, **L**ost **T**ime) incidents need to be reported. An injury must be considered a recordable DART Case if it results in any of the following: medical treatment beyond first aid, days away from work, restricted work/job transfer, worker loss of consciousness, or death.

After rendering first aid, including obtaining emergency medical care if required, and securing the accident site to prevent any further injuries, immediate notification to the USACE COR must occur for any accident listed below:

- Fatal Injury/illness
- Any mishap resulting in Injury/Illness requiring Emergency Response Personnel
- One (1) or more persons hospitalized as a result of a single occurrence
- Permanent totally disabling injury/illness
- Permanent partially disabling injury/illness
- Accidental property damage in excess of \$500,000
- Three (3) or more individuals becoming ill or requiring medical attention due to a suspected site condition or a hazardous or toxic agent on site

In addition to those listed above, any of the following types of mishaps shall be immediately reported to the USACE COR and shall be investigated in depth to identify all causes and to arrive at recommendations for hazard control measures to be implemented to prevent further occurrences. The USACE COR has the responsibility to immediately notify USACE Headquarters within 24 hours and to provide follow-up investigative findings within ten (10) days.

- Electrical - including Electrical Shock, Arc Flash, etc.
- Uncontrolled Release of Hazardous Energy (electrical and non-electrical).
- Load Handling Equipment (LHE) or Rigging - including all crane incidents.
- Heavy Equipment - including tip overs of loaders/dozers, etc.
- Fall-from-Height - excluding same surface.

e. Creating an Accident or Incident Report

The contractor PM/S shall report all construction mishaps that require any treatment than on-site first aid to the USACE COR per the requirements above. After notification, follow the steps below to generate an Accidental/Incident Report in the Contractor Incident Report System (CIRS).

1. **Create the Initial Report** and forward it to the USACE COR using the attached accident form in Appendix E. The CIRS Report must be completed and submitted to the USACE COR or delegated safety investigator within 24 hours.
2. **Prepare and Submit a follow-up Accident Abstract** within 5 days of the incident, and email to the USACE COR and the SSHO. This follow-up report must be more in-depth than the initial report.
3. **Accident Review Boards** are held every 30 days with the Construction Manager and USACE COR to review any accident meeting the DART Criteria above.

f. Accident Investigation

Accident investigation is primarily a fact-finding procedure used to increase the safety and health of all our employees and prevent recurrences of similar accidents.

Immediate concerns:

- Ensure any injured person receives proper care.
- Ensure co-workers and personnel working with similar equipment or in similar jobs are aware of the situation. This is to ensure that procedural problems or defects in certain models of equipment do not exist.
- Start the investigation promptly.

A CIRS form which details specific company requirements for investigation, is provided in Appendix E and will be used to gather data to determine causes and corrective actions. As a minimum, the form contains the following areas of concern. Required Accident Investigation form data includes the following:

- Employee's name
- Date and time
- Occupation or task being performed
- Shift and department
- Company ID number
- Employee's address
- Sex/age/DOB
- Social security number
- Length of service
- Length of time at specific job
- Time shift started
- Overtime length when injury occurred
- Physician's and hospital name (if transported)
- Type of injury
- Resulting fatalities
- Description and analysis of accident
- Complete accident tree
- Action taken to prevent recurrence
- Employee's statement
- Witnesses' statement
- Employer's statement
- Person completing form and date
- Person(s) reviewing form and date

The follow-up Accident Abstract Report will be numbered in the upper right-hand corner, Page 'X' of # of pages. The report will include but is not limited to the following:

- Investigation report form and pertinent data
- Photographs/drawings/exhibits of scene
- Narrative of accident
- Sequence of events
- Contributing information
- Findings and recommendations of review team
- Action items and completion dates
- Responsible persons
- Follow-up procedures to ensure completion
- Distribution list

g. Administrative Controls

Once data has been gathered from the accident investigation report, company administrative controls will be used where needed to eliminate or reduce the frequency and severity of accidents and near misses. Examples of administrative controls include the following:

- Reduce the production rate of construction operations where possible.
- Provide additional periodic breaks, when warranted, to relieve mental or physical fatigue.
- Increase the number of employees assigned to a task to alleviate severe conditions, i.e. lifting heavy objects, etc.
- Implement additional safety inspection procedures or increased frequency in order to identify potential hazards.

IMMEDIATE ACTIONS UPON MAJOR ACCIDENTS, INJURIES, ILLNESSES

1. *When an accident occurs, first determine the medical condition of the injured employee and get the required medical care. If required, **CALL FOR EMERGENCY SERVICES AT 911.** Secure the site.*
2. ***Call the USACE COR** to report the accident/incident.*
3. ***Call ARDL** at 618-244-3235 as soon as possible after getting medical attention for the injured employee.*
4. *Keep the accident scene intact until an accident investigation can be completed and the USACE COR provides written permission releasing the site. This may be several days.*
5. *All information on the accident report shall be filled out and completed within 4 hours of the accident. Complete CIRS and instructions are included in this document as APPENDIX E.*
6. *The accident report must be submitted to the USACE COR via hand delivery or electronically within **24 hours** of the accident.*

I. PLANS, PROGRAMS, AND PROCEDURES REQUIRED BY THE SAFETY MANUAL**1. Fatigue Management Plan**

Not Applicable.

2. Emergency Plans

This emergency response plan has been developed so employees can be evacuated from the job site if a terrorist act, natural disaster, hazardous spill, or fire occurs on-site.

ANTICIPATED EMERGENCIES:

- Earthquakes
- Fire
- Flooding
- Bomb scare
- A terrorist act

Pre-Emergency Planning:

During orientation, all employees shall be notified of the different types of emergencies that could occur and told where to meet if the "air horn" is sounded to warn them of an event. The air horn shall be located inside the field office.

- Personnel Role - all employees working on the site when the warning is sounded shall assemble near the field office trailer.
- The lines of authority include the SPM, USACE COR, PM/S, SSHO, ARDL Field Staff and others, as required.
- An emergency shall be communicated using an air horn warning of three quick blasts. After five minutes the air horn shall be sounded again as another warning.
- Subcontractors shall meet with their supervisors, for a headcount, near the ARDL field office and at that time given instructions concerning the emergency.
- The assembly area will be located near the ARDL field office trailer or other area as necessary to protect employees.
- Each subcontractor and ARDL has certified First Aid and CPR qualified people. If necessary, employees and others shall be transported to the nearest medical facility ASAP.
- Responsible people shall determine the best emergency facility to send injured employees at that time.

a. Procedures and Tests

Emergency plans to ensure employee safety in case of fire or other emergency shall be prepared in writing and reviewed with all affected employees. Emergency plans shall be tested to ensure their effectiveness. Plans shall include escape procedures and routes, critical site operations, accounting for employees after an evacuation, rescue and medical duties, means of reporting emergencies, and persons to be contacted for information or clarification.

In case of fire or other potential threats requiring evacuation from this project site, employees should leave the area immediately and proceed to the ARDL office trailer and wait for further instructions.

The PM/S or SSHO will immediately take roll to verify that all ARDL and subcontractor employees are accounted for and assess the situation to determine if any injuries have occurred.

After all personnel are moved to safety and accounted for, the PM/S or SSHO will immediately call police/fire at **618-274-4504** to report the incident and seek appropriate assistance.

Emergency plans will be reviewed at the start of the project and during site visits with the Fire Department or other appropriate entities. Emergency plans will also be reviewed with ARDL and subcontractor employees at the pre-construction meeting, AHA meetings, Preliminary and Initial QC meetings, and at all employee indoctrinations.

The Emergency evacuation plan shall be posted in the common area of the jobsite trailer next to the posted emergency phone numbers. Plans should be reviewed periodically throughout the project and revised, if necessary, according to the needs of the project. If any changes are made to the plan, changes should be conveyed to the Fire Department or other appropriate entities (employees, subcontractors, and Contracting office personnel) and should be posted in the jobsite trailer immediately.

b. Spill Plan

For this project, a spill containment kit will be kept in a sealed container next to the jobsite trailer. In the event of a hazardous spill, the PM/S or SSHO shall assess the situation for appropriate response.

The Fire Department and other appropriate entities should be contacted immediately by calling **618-274-4504** and informed of the type and extent of the spill. Appropriate measures should then be implemented to contain the spill until proper cleanup can take place.

c. Fire Fighting Plan

All situations, regardless of size or extent, should immediately be reported to the Fire Department, USACE COR, and other appropriate entities.

Under no circumstances should an employee attempt to extinguish a fire when that situation poses a threat of bodily injury. If the threat to life or of bodily injury exists, the Fire Department should be contacted immediately by calling **618-274-4504** to handle the situation.

Fire extinguishers will be located in the common area of the jobsite trailer and visibly marked. Any situation that arises that can easily and safely be taken care of with the use of a fire extinguisher should be extinguished immediately. The Fire Department and other appropriate entities should immediately be contacted, and the type and extent of the situation should be explained.

Portable fire extinguishers shall be provided where needed, such as near the location of welding or cutting with a torch, in all project vehicles, on all heavy equipment, etc.

The portable fire extinguishers shall be inspected at least monthly. If the pins are missing or it has been used, the fire extinguisher shall be red tagged and taken for re-inspection and/or charging as soon as possible.

When welding or cutting takes place, a flash shield is required. No slag or sparks shall be allowed to fall onto other employees or visitors.

BEFORE WELDING OR CUTTING WORK BEGINS "**Hot Work Permit**" must be approved from the SSHO.

"Fire watch" personnel shall watch for flying sparks or slag during welding or torch cutting operations. The "fire watch" person shall stay at least 30-minutes after all welding or cutting has finished for the day to ensure no fire is present.

If using any type of gas cylinder, a portable fire extinguisher shall be in close proximity to the operation.

Each piece of heavy equipment, such as a forklift, bulldozer, backhoe/loader, dump truck, etc. shall be equipped with at least a 5-B:C portable fire extinguisher. During refueling of these machines, the engine shall be turned off.

The storage of combustible or flammable materials shall be stored in proper containers. Gasoline or diesel fuels shall be stored in metal safety cans. Diesel fuel will be stored in tanks which will be adequately bermed and grounded.

NO PLASTIC GAS CANS OR 5-GALLON JERRY CANS ARE ALLOWED ON THE PROJECT

d. Posting of Emergency Telephone Numbers

Emergency Phone numbers should be posted in a clearly visible location in the common area of the jobsite trailer and on the secure, external bulletin board located outside the jobsite trailer.

e. Man Overboard/Abandon Ship

Not Applicable.

f. Plan for Prevention of Alcohol and Drug Abuse

See APPENDIX G

3. Site Sanitation Plan

Drinking water, hand wash stations, toilet facilities, and waste disposal shall be provided at the Project, as per the requirements of the EM 385-1-1.

4. Medical Support Agreement**a. On-site Medical Support**

On-site medical support includes procurement and upkeep of the following basic First Aid requirements in the site trailer. The SSHO will ensure that proper emergency equipment is maintained on-site and the locations of emergency equipment will be posted in a visible location within the job site as necessary. The following emergency equipment will be maintained on-site as a minimum and additional equipment will be added as necessary:

- Industrial first aid kit
- 20 lb. ABC fire extinguisher
- Telephone
- Water supply
- Eyewash

The SSHO and PM/S will have CPR and basic first aid training, as required. It is required that two persons with current CPR Training Certifications be on-site at all times.

A record of personnel trained in CPR and First Aid will be on file in the project trailer, as well as the corporate office. A list of trained personnel will be conspicuously posted in the trailer.

Those with CPR and/or First Aid Training are:

Mitchell Jenkins
Chris Creps
Rob Dismang
Sonya Cozzone

In the event of an injury requiring more than basic First Aid, the prescribed procedures for a medical emergency will be followed.

b. Off-site Medical Arrangements

Off-site medical arrangements require that all trauma be immediately reported by calling **618-337-1956**.

In the event of an emergency, the appropriate response agencies must be contacted. Pertinent emergency agencies are listed below:

SITE ADDRESS:

Fairmont City, IL 62021

SITE PHONE:

TBD

Police:

618-274-4504

Fire:

618-274-4504

Ambulance:

618-337-1956

HOSPITAL LOCATION FOR MEDICAL EMERGENCIES

Hospital:

Gateway Regional Medical Center

Address:

440 W Pontoon Rd
 Granite City, IL 62040

Phone:

(618)451-7675

See Attached HOSPITAL ROUTE Map - APPENDIX D for map and directions

SECONDARY HOSPITAL LOCATION FOR MEDICAL EMERGENCIES

Hospital:

Barnes-Jewish Hospital

Address:

4353 Clayton Ave.
 St. Louis, MO 63110

Phone:

314-362-0700

See Attached HOSPITAL ROUTE Map - APPENDIX D for map and directions

5. Bloodborne Pathogen Program

See APPENDIX K

6. Exposure Control Plan

See APPENDIX K

7. Automatic External Defibrillator (AED) Program

See APPENDIX N

8. Site Layout Plan (Site Usage Plan)

See APPENDIX C

9. Access/Haul Road Plan

See APPENDIX O

10. Hearing Conservation Program

Not Applicable

11. Respiratory Protection Plan

To be provided if applicable

12. Health Hazard Control Program

See APPENDIX L – ARDL SSHP

13. Hazard Communication Program - See APPENDIX J for more information

a. When hazardous substances are scheduled to be utilized or when a hazardous substance is brought onto the jobsite, the written hazard communication program shall be amended to address the following:

- i. training (to include potential safety and health effects from exposure)
- ii. labeling
- iii. current inventory of hazardous chemicals on the jobsite
- iv. location and use of the SDSs

b. Any time that hazardous substances are brought onto the job site, all employees potentially exposed to the substance will be advised of information in the SDS for the substance.

c. A copy of the SDS for each hazardous substance on the job site will be maintained in an inventory, provided to the government, and made available to all potentially exposed employees. For emergency response purposes, each entry in the inventory shall include the approximate quantities (e.g., liters, kilograms, gallons, pounds) that will be on-site at any given time. The inventory will be updated as frequently as necessary to ensure accuracy.

14. Process Safety Management Program

Not Applicable

15. Lead Compliance Plan

See APPENDIX L - ARDL SSHP (Appendix E)

16. Asbestos Abatement Plan

Not Applicable

17. Radiation Safety Program

Not Applicable

18. Abrasive Blasting Procedures

Not Applicable

19. Heat Stress Monitoring Plan

See APPENDIX H

20. Cold Stress Monitoring Plan

See APPENDIX H

21. Indoor Air Quality Management

Not Applicable

22. Mold Remediation Plan

Not Applicable

23. Chromium (VI) Exposure Evaluation

Not Applicable

24. Crystalline Silica Evaluation

See APPENDIX I

25. Lighting Plan for Night Operations

Not Applicable

26. Traffic Control Plan

See Transportation and Disposal Plan

27. Fire Prevention Plan

See APPENDIX L - ARDL SSHP

28. Wild Land Fire Management Plan

Not Applicable

29. Arc Flash Hazard Analysis

Not Applicable

30. Assured Equipment Grounding Control Program (AEGCP)

Not Applicable

31. Hazardous Energy Control Program & Procedures

Not Applicable

32. Standard Pre-Lift Plan - Load Handling Equipment

Not Applicable

33. Critical Lift Plan - Load Handling Equipment

Not Applicable

34. Naval Architectural Analysis - Load Handling Equipment (Floating)

Not Applicable

35. Floating Plant Inspection and Certification

Not Applicable

36. Severe Weather Plan for Marine Activities

Not Applicable

37. Emergency Plan for Marine Activities

Not Applicable

38. Man Overboard/Abandon Ship Procedures

Not Applicable

- 39. Float Plant for Launches, Motorboats, and Skiffs**
Not Applicable
- 40. Fall Protection and Prevention Plan**
Not Applicable
- 41. Demolition Plan**
Not Applicable
- 42. Rope Access Work Plan**
Not Applicable
- 43. Excavation/Trenching Plan**
Not Applicable
- 44. Fire Prevention and Protection Plan for Underground Construction**
Not Applicable
- 45. Compressed Air Work Plan for Underground Construction**
Not Applicable
- 46. Erection and Removal Plan for Formwork and Shoring**
Not Applicable
- 47. Precast Concrete Plan**
Not Applicable
- 48. Lift-Slab Plans**
Not Applicable
- 49. Masonry Bracing Plan**
Not Applicable
- 50. Steel Erection Plan**
Not Applicable
- 51. Explosives Safety Site Plan (ESSP)**
Not Applicable
- 52. Blasting Plan**
Not Applicable
- 53. Dive Operations Plan**
Not Applicable

- 54. Safe Practices Manual for Diving Activities**
Not Applicable
- 55. Emergency Management Plan for Diving**
Not Applicable
- 56. Tree Felling and Maintenance Program**
See Appendix P
- 57. Aircraft/Airfield Construction Safety and Phasing Plan**
Not Applicable
- 58. Aircraft/Airfield Safety Plan Compliance Document (SPCD)**
Not Applicable
- 59. Site Safety and Health Plan for HTRW**
Not Applicable
- 60. Confined Space Entry Procedures**
Not Applicable
- 61. Confined Space Program**
Not Applicable

J. RISK MANAGEMENT PROCESS

1. Activity Hazard Analysis Requirements

ARDL uses AHAs as part of its total risk management process. Subcontractors and suppliers to this project are encouraged to use the project specific AHA form provided/requested by the USACE COR, but may use their own equivalent form, if approved. A sample AHA will be found in Appendix F for use by project participants.

AHAs are to be developed and created by the field crews/workers performing the work, along with the assistance of the site management team, as necessary. AHAs shall be reviewed and modified to address changing conditions, operations, or designated competent/qualified persons.

AHAs are required for work activities performed during this project. Detailed project-specific hazards and controls shall be provided within each AHA. The overall Risk Assessment Code (RAC) shall be determined for each AHA based on the highest RAC assessed to an individual step within each AHA.

Subcontractors/suppliers must submit their required AHAs to ARDL for review by the SSHO. Once accepted, ARDL will forward the AHA to the USACE COR for review. No work will be allowed to begin on any activity until the USACE COR has reviewed and accepted the corresponding required AHAs.

Prior to the start of any activity, a Preparatory Meeting shall be held during which the approved AHAs for that activity is reviewed and discussed in-depth by the entire field team associated with the work, including the PM/S, SSHO, CQCSM, foremen, and every member of the field crews/workers performing the work.

Each crew member/worker performing the work must sign the AHA signifying that he/she understands the steps, hazards, and required actions to minimize each risk, and agrees to follow the steps and actions while performing the work. If additional or new crew members/workers are assigned to the activity, an additional preparatory meeting must be held in order to review the AHA and each must sign prior to performing any associated work.

The current signed AHAs shall be readily available for reference in the project trailer.

ARDL's Site Management Team and the USACE COR shall use the AHA to assure work is being performed in a safe manner consistent with the approved procedures. If, at any time, it is found that work is not being conducted in a safe manner and/or not in accordance with the approved AHA, ARDL and/or the USACE COR shall stop the work until it is in compliance with the EM 385-1-1, APP, AHA, or until the AHA is revised and approved, as necessary.

2. Site-Specific Activity Hazard Analyses

AHAs for this project, developed and reviewed for compliance with EM 385-1-1 requirements by ARDL are found in Appendix F.

Prior to the start of any work associated with the activity, each AHA will be submitted for review and acceptance by the USACE COR. Once accepted by the USACE COR, the approved copy will be inserted into this section of the APP.

April 19, 2019

Mr. Chris Creps
400 Aviation Drive
Mt. Vernon, IL 62864

Subject: Contract W912P918D0014
Appointment as Safety Officer

Dear Mr. Creps:

ARDL Inc. has formally appointed you as the Safety Officer for the above referenced project. The position will entail implementation and oversight of all safety related issues at the project site, including training/indoctrination of all site personnel, project adherence to all OSHA and EM-385 requirements, and meeting with the Government on a regular basis, as required.

You are also empowered by me to fully execute ARDL's Construction Safety Plan related to this project. You are vested with complete authority to execute all Safety related issues specifically outlined in the Plan related to this project and you have full authority to stop work at any time should you deem necessary. Working in conjunction with the General Contractor and Subcontractors, you will ensure all safety rules and regulations are followed and adhered to.

Sincerely,

Valerie Jenkins
President
ARDL Inc.

Site Safety and Health Officer – Christopher Creps (ARDL)

Qualifications

- | | |
|---|---|
| <ul style="list-style-type: none"> ➤ <i>More than 30 years of promoting, coordinating, and implementing safe work environments in the private and public sectors.</i> ➤ <i>Certified First Aid/CPR/AED Instructor</i> ➤ <i>More than 27 years serving in the United States Marine Corps.</i> | <ul style="list-style-type: none"> ➤ <i>Health and safety experience and skills, including coordinating/providing safety training and enforcing safety policies, regulations and guidelines.</i> ➤ <i>More than 20 years as an instructor, and 2 years as Assistant Director, at the Chemical, Biological, Radiological, and Nuclear (CBRN) defense school.</i> |
|---|---|

Education:	BS, Psychology Campbell University, Buies Creek, NC	
Special Qualifications:	<ul style="list-style-type: none"> First Aid/CPR/AED Instructor OSHA 30 Hour Construction Safety (OSHA30) OSHA HAZWOPER (40 Hour) OSHA HAZWOPER Supervisor (8 Hour) 	
Years Experience:	10	Location: Texico, IL

Technical Experience

- Contributed to the development and implementation of Site Safety and Health Plan, Environmental Protection Plan, Accident Prevention Plan, and Air Monitoring Plans.
- Provided employee training and supervised staff in a variety of settings.
- Conducted and maintained safety and health programs in an industry setting.
- Experienced in conducting safety audits, coordinating and conducting annual and on-site safety training, ensuring personnel and construction project safety.
- Experienced in responding to emergency situations.
- Experienced equipment operator.



Contract Relevant Experience

- Acting as the HSE Safety Coordinator at Michels Corporation was responsible for: coordinating and maintaining the company safety and health program, advising management on matters of safety, and overall company safety audits and training.
- Chemical, Biological, Radiological and Nuclear Defense Instructor and Trainer for the US Marine Corps.
- Extensive record keeping experience with regard to safety logs, audits, and training.

Professional Development


- Chemical, Biological, Radiological and Nuclear Defense Training
- Curriculum Development Training
- Leadership Training
- First Aid/CPR Instructor
- OSHA 30 Hour Construction Safety training (OSHA30)
- OSHA 40 hr HAZWOPER training (40 Hour)
- OSHA 8 hr HAZWOPER Supervisor training (8 Hour)

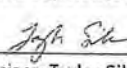
OEC1030-7049088

This card certifies that:
CHRIS CREPS

has completed a 30-Hour OSHA Hazard Recognition Training
for the Construction Industry.


 Director: Jeffrey Pairan


 Trainer: Taylor Sikes

04/03/2018
 Grad. Date:


Chris Creps
is hereby authorized as:
First Aid/CPR/AED (Adult)
Level 1 - Instructor

MIC532
Training Center ID

2663214
Registry No.


11/02/2020
Expiration Date

541-204-3090
 800-447-3177
 hsi.com



Level	Training Programs Authorized to Teach	Plus Levels
1	Bloodborne Pathogens; Oxygen First Aid for Emergencies; BasicPlus CPR, AED, and First Aid for Adults	—
2	Bloodborne Pathogens; Oxygen First Aid for Emergencies; CarePlus CPR and AED; Child/Infant CPR and AED Supplement	—
3	PediatricPlus CPR, AED, and First Aid for Children, Infants, and Adults	1 & 2

Training programs conform to 2015 CPR, ECC, and First Aid Guidelines.
Visit hsi.com for more information.
MEDIC First Aid is a member of the HSI family of brands.



Certificate of Completion

This certifies that

Chris L. Creps

has successfully completed

OSHA 40 Hour HAZWOPER Training

Annual Refresher Training Required

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)

And State OSHA/EPA Regulations as well including 29 CFR 1926.65(e)

This course is approved for 40 Contact Hours (4 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

1903281278330

Certificate Number

3/28/2019

Issue Date



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Annual Refresher Training Required

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(888) 309-SAFE (7233) or 805 306-8027
<https://www.safetyunlimited.com>

Certificate of Completion

This certifies that

Chris L. Creps

has successfully completed

8 Hour HAZWOPER Supervisor Training

This certificate does not in itself indicate initial 24 or 40 Hour HAZWOPER Training

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)(4)

And all State OSHA/EPA Regulations as well including 29 CFR 1926.65 for Construction.

This course is approved for 8 Contact Hours (0.8 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

1903294278330

Certificate Number

3/29/2019

Issue Date



UNLIMITED, Inc.

OSHA Compliant Safety Training Since 1993

2139 Tapo St., Suite 228 Simi Valley, CA 93063
(888) 309-SAFE (7233) or 805 306-8027
<https://www.safetyunlimited.com>

Scan this code or visit www.safetyunlimited.com/v to verify certificate.
Annual Refresher Training NOT Required

April 19, 2019

Ms. Sonya Cozzone
400 Aviation Drive
Mt. Vernon, IL 62864

Subject: Contract W912P918D0014
Appointment as Alternate Safety Officer

Dear Ms. Cozzone:

ARDL Inc. has formally appointed you as the Alternate Safety Officer for the above referenced project. The position will entail implementation and oversight of all safety related issues at the project site, including training/indoctrination of all site personnel, project adherence to all OSHA and EM-385 requirements, and meeting with the Government on a regular basis, as required.

You are also empowered by me to fully execute ARDL's Construction Safety Plan related to this project. You are vested with complete authority to execute all Safety related issues specifically outlined in the Plan related to this project and you have full authority to stop work at any time should you deem necessary. Working in conjunction with the General Contractor and Subcontractors, you will ensure all safety rules and regulations are followed and adhered to.

Sincerely,

Valerie Jenkins
President
ARDL Inc.



Alternate Site Safety and Health Officer - Sonya Cozzone (ARDL)

<i>Qualifications</i>		
<ul style="list-style-type: none"> ➤ More than 14 years of in management of Occupational Environmental safety and health programs. ➤ First Aid/CPR/AED Instructor ➤ Health and safety experience and skills, including coordinating/ providing safety training and enforcing safety policies, regulations and guidelines. ➤ Strong knowledge of a wide variety of safety issues. 		
Education:	BS, Occupational Safety and Health Columbia Southern University, Orange City, AL	
Special Qualifications:	<ul style="list-style-type: none"> • OSHA 30 Hour Construction Safety (OSHA30) • OSHA HAZWOPER (40 Hour) • OSHA HAZWOPER Supervisor (8 Hour) 	
Years Experience:	14	Location: Carlinville, IL

Technical Experience

- Contributed to the development and implementation of Site Safety and Health Plan, Respiratory Protection, Confined Space, Bloodborne Pathogens, Hazardous Communications, and PPE Plans.
- Provided employee training and supervised staff in a variety of settings.
- Conducted and maintained safety and health programs in an industry setting.
- Experienced in conducting safety audits, coordinating and conducting monthly and on-site safety training, ensuring personnel and construction project safety.
- Trained and educated members in the use of regulatory programs.
- Trained first volunteer respondents in first aid, CPR and AED.

Contract Relevant Experience

- As safety supervisor for DuPont Pioneer developed and implemented safety processes provided guidance to management regarding safety and health, and provided safety train to employees.
- Developed, analyzed, and implemented written regulatory programs, safety measures, and emergency response strategies for facilities and over 100 employees.

Professional Development

- Trained in first aid, CPR and AED
- OSHA 30 Hour Construction Safety training (OSHA30)
- OSHA 40 hr HAZWOPER training (40 Hour)
- OSHA 8 hr HAZWOPER Supervisor training (8 Hour)



24-602000679

This card acknowledges that the recipient has successfully completed:

30-hour Construction Safety and Health

This card issued to:

Sonya Cozzone

Scott May
Trainer Name

3/3/2016
Date of Issue

OSHA TRAINING Occupational Safety and Health Training American Safety Training, Inc.™

Name **Sonya Kiehna**

Has Successfully Completed a 14-Hour General Industry
Occupational Safety and Health Training Course in
Essentials of Safety I

Attendee ID #
318065-001

Class #
1STL05B

CEU Credit
1.4 Hours

Course Location
St. Louis, MO

Course Dates
June 27-28, 2005

Trainer

Scott May **Date**
June 28, 2005



Certificate of Completion

This certifies that

Sonya M. Cozzone

has successfully completed

OSHA 40 Hour HAZWOPER Training

Annual Refresher Training Required

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)

And State OSHA/EPA Regulations as well including 29 CFR 1926.65(e)

This course is approved for 40 Contact Hours (4 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

1903211277101

Certificate Number

3/21/2019

Issue Date



UNLIMITED, Inc.
OSHA Compliant Safety Training Since 1993

2139 Tapo St., Suite 228 Simi Valley, CA 93063
(888) 309-SAFE (7233) or 805 306-8027
<https://www.safetyunlimited.com>

Scan this code or visit www.safetyunlimited.com/v to verify certificate.
Annual Refresher Training Required

Certificate of Completion

This certifies that

Sonya M. Cozzone

has successfully completed

8 Hour HAZWOPER Supervisor Training

This certificate does not in itself indicate initial 24 or 40 Hour HAZWOPER Training

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)(4)

And all State OSHA/EPA Regulations as well including 29 CFR 1926.65 for Construction.

This course is approved for 8 Contact Hours (0.8 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

1903264277101

Certificate Number

3/26/2019

Issue Date



UNLIMITED, Inc.
OSHA Compliant Safety Training Since 1993

2139 Tapo St., Suite 228 Simi Valley, CA 93063
(888) 309-SAFE (7233) or 805 306-8027
<https://www.safetyunlimited.com>

Scan this code or visit www.safetyunlimited.com/v to verify certificate.
Annual Refresher Training NOT Required

INDOCTRINATION FORM

Name: _____ Trade: _____

Driver License #: _____ State: _____

Vehicle License #: _____ State: _____

Make: _____ Model: _____ Year: _____

1. () 100% Hard Hat Project
2. () Personal Protective Wear required. NO sneakers. Safety boots, safety glasses, gloves, high visibility clothing, and hearing protection
3. () Proper and adequate protective clothing. NO shorts. Shirts with sleeves/ long pants at all times.
4. () "HORSEPLAY" will not be permitted.
5. () Location of Bulletin Board
6. () Location of emergency telephone numbers/medical facilities/treatment posted Location of fire extinguishers - firefighting and other emergency procedures Report all accidents to general contractor's trailer immediately
7. () Report any property damage immediately
8. () Location of office trailers and restrooms
9. () Drugs, intoxicants, ammunition, weapons, guns are PROHIBITED
10. () Understand company Safety and Accident Prevention Program
11. () Observe and practice all Government safety and health requirements
12. () Daily housekeeping
13. () Vehicle parking and regulations. Parking lot speed limit of 20 MPH
14. () Safe clearance procedures
15. () Overhead safety and safety harnesses required
16. () Employee responsible for property/safety of others. Security of ladders, tools, unused supplies/materials

EMPLOYEE SIGNATURE: _____ DATE: _____

Subcontractor Supervisor's Signature: _____

General Contractor Safety Office's Signature: _____

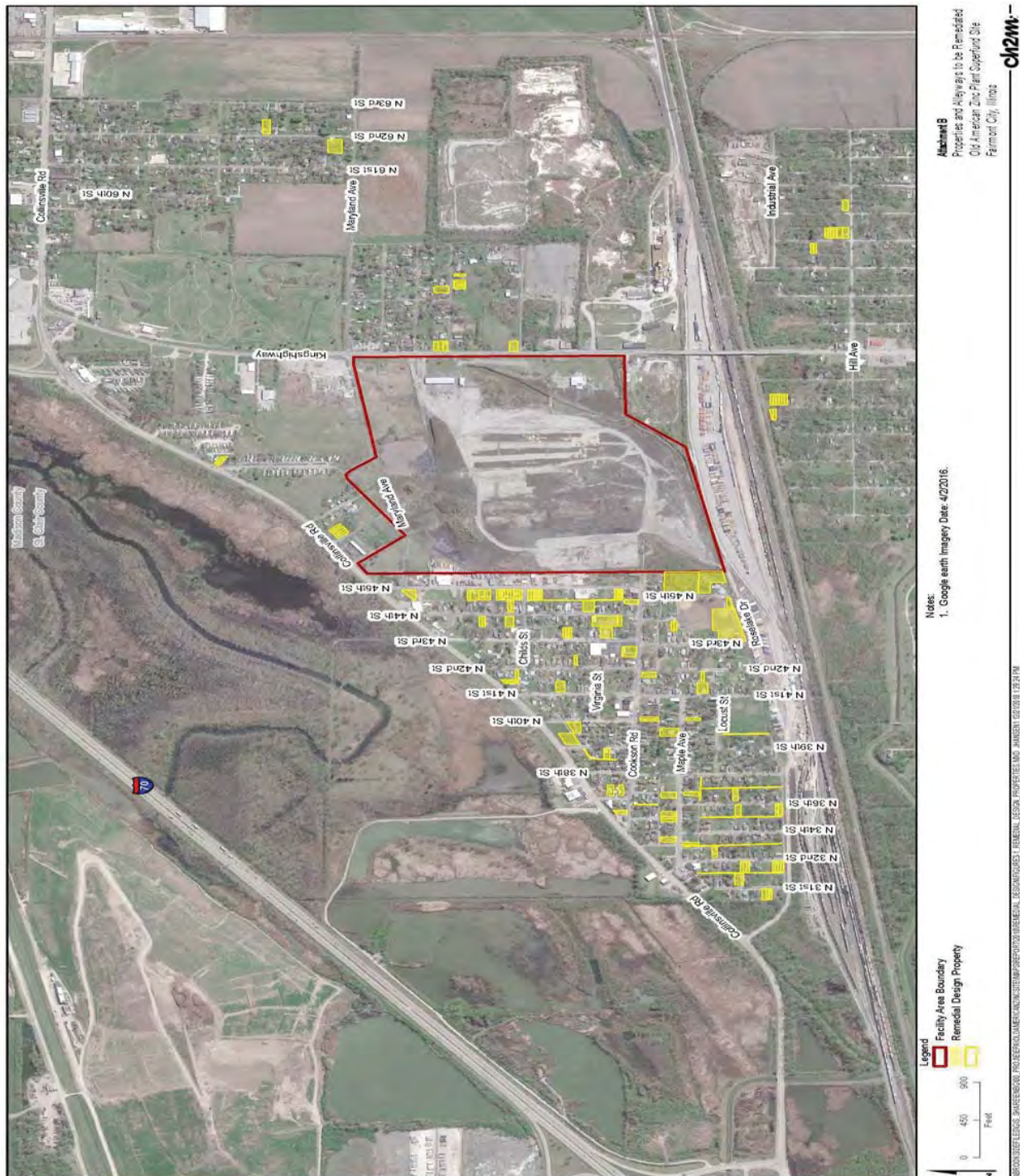
Company Phone Number: _____

Please list below any known medical problems of which we should be aware in the event of any emergency: _____

IN THE EVENT OF EMERGENCY, CALL:

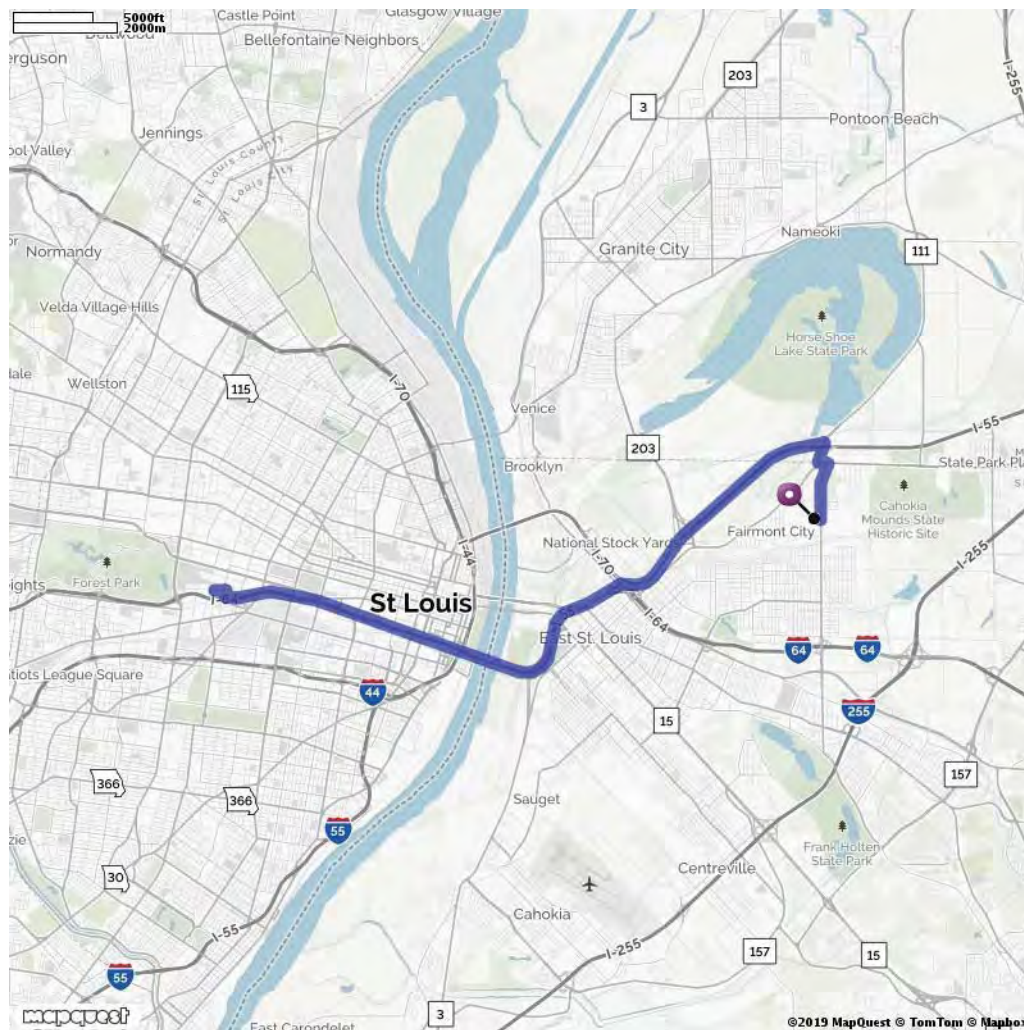
Name: _____ Telephone Number: _____

SITE USAGE MAP (LAYDOWN AREA)



This map shows a blue route starting near Granite City, IL, heading north to Port Louis, MO, then south through St. Louis, MO, and ending near Fairmont City, MO. The route passes by Horseshoe Lake and Horseshoe Lake State Park. Key locations include Granite City, Madison, Venice, Brooklyn, Gateway National Golf Links, National Stock Yards, Collinsville, Fairmont City, and Horseshoe Lake. Major roads like I-55, I-70, and I-25 are shown. A scale bar indicates 500ft and 1000m.

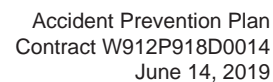
SECONDARY HOSPITAL ROUTE MAP AND DIRECTIONS



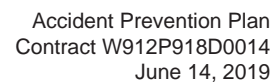
☐ Initial Report
☐ Follow-up Report
☐ Final Report
 Date ____ / ____ / ____

Contractor Incident Report System (CIRS)

1. Contract Information		Incident Information
Prime Contractor:	Cage Code:	
Contract Number:	Installation of Incident:	
Task Order #:	Contracting Activity/ROICC Office:	
Contractor Contact Information		
Name (Last, First):	Phone #:	
Email Address:	Date Notified:	
2. Incident Type (Please Check/Bold All That Apply)		
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> Assault/Violent Act <input type="checkbox"/> Diving <input type="checkbox"/> Electrical Shock/Burns <input type="checkbox"/> Equipment <input type="checkbox"/> Installation/Repair <input type="checkbox"/> Explosion, Non-Ordnance <input type="checkbox"/> </div> <div style="width: 33%;"> <input type="checkbox"/> Extreme Environmental Exposure <input type="checkbox"/> Falls, slip, trip, or bodily exertion <input type="checkbox"/> Fires - All Types <input type="checkbox"/> Hazardous Material (any type) <input type="checkbox"/> Industrial <input type="checkbox"/> (Select Additional Below) </div> <div style="width: 33%;"> <input type="checkbox"/> Man over the side (No water entry) <input type="checkbox"/> Man Overboard - Water Entry <input type="checkbox"/> Material Handling Equipment <input type="checkbox"/> Ordnance-Related (Explosive) <input type="checkbox"/> Vehicle (Government or Private) <input type="checkbox"/> </div> </div>		
Industrial Incident Additional Information (Please Check/Bold All That Apply)		
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> Confined Space <input type="checkbox"/> Demolition/Renovation <input type="checkbox"/> Trenching/Entrapment <input type="checkbox"/> Traffic Control <input type="checkbox"/> Welding and Cutting <input type="checkbox"/> Control of Hazardous Energy <input type="checkbox"/> </div> <div style="width: 33%;"> <input type="checkbox"/> Hand and Power Tools <input type="checkbox"/> Rigging <input type="checkbox"/> Cranes and Hoisting Equipment <input type="checkbox"/> Floating Plant and Marine Activities <input type="checkbox"/> Pressurized Equipment and System <input type="checkbox"/> Fall Protection <input type="checkbox"/> </div> <div style="width: 33%;"> <input type="checkbox"/> Work Platforms and Scaffolding <input type="checkbox"/> Underground Construction, Shafts, and Caissons <input type="checkbox"/> Concrete, Masonry, Steel Erection and Residential Construction <input type="checkbox"/> Tree Maintenance and Removal <input type="checkbox"/> Airfield and Aircraft Operations <input type="checkbox"/> </div> </div>		

2

4. Fully Explain What Allowed or Caused the Incident:		Incident Information
Direct Cause:		
Indirect Cause:		
Additional Action Taken: (Please Include a Begin Date and Est. End Date in Description)		
Additional Action Taken: (Please Include a Begin Date and Est. End Date in Description) <i>(Use the back of page if you need additional space)</i>		
5. Contributing Factors:		
Was Visibility Restricted? <input type="checkbox"/> Yes <input type="checkbox"/> No	Distance Visibility was restricted:	
Unit of Measure (Check/Bold): <input type="checkbox"/> Feet <input type="checkbox"/> Yards <input type="checkbox"/> Meters <input type="checkbox"/> Miles <input type="checkbox"/> Nautical Miles		
Visibility Restricted By: (Check/Bold all that apply) <div style="display: flex; flex-wrap: wrap; justify-content: space-between;"> <div><input type="checkbox"/> Fog</div> <div><input type="checkbox"/> Smoke</div> <div><input type="checkbox"/> Rain</div> <div><input type="checkbox"/> Sleet</div> <div><input type="checkbox"/> Snow</div> <div><input type="checkbox"/> Mist</div> <div><input type="checkbox"/> Dust</div> <div><input type="checkbox"/> Sandstorm</div> <div><input type="checkbox"/> Unknown Object</div> <div><input type="checkbox"/> Other:</div> </div>		
Lighting Conditions at Site of Mishap: (Please Check) <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate <input type="checkbox"/> Unknown	Was Noise Level a Factor: (Please Check) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Was Carbon Monoxide (CO) a Factor: (Please Check) <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes CO Alarm Manufacturer:



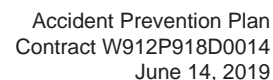
Incident Information

Other Contributing Factors:

[illegible]

1. Injured Data			(if applicable) Person #
Age:	Gender: (Check/Bold) <input type="checkbox"/> Male <input type="checkbox"/> Female	Prime Contractor Company Name:	Subcontractor Company Name:
2. General Information			
Drug or Alcohol Involved: (Check/Bold all that apply) <input type="checkbox"/> None <input type="checkbox"/> Unknown <input type="checkbox"/> Alcohol <input type="checkbox"/> Drugs <input type="checkbox"/> Alcohol and Drugs			
Who Provided First Aid? <input type="checkbox"/> Onsite <input type="checkbox"/> Base <input type="checkbox"/> Public			
Was Ergonomics a Factor: (Check/Bold) <input type="checkbox"/> Yes <input type="checkbox"/> No Type of Ergonomic Injury: (Check/Bold All That Apply) <input type="checkbox"/> Lifting <input type="checkbox"/> Positioning <input type="checkbox"/> Bending <input type="checkbox"/> Equipment Placement Office <input type="checkbox"/> Equipment Placement Industrial <input type="checkbox"/> Repetitive Motion <input type="checkbox"/> Impact Strain			
3. Injury Illness/Fatality Information			
Severity of Injury/Illness: (Check/Bold) <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"><input type="checkbox"/> Fatality</div> <div style="width: 50%;"><input type="checkbox"/> Lost Workday Case Involving Days Away From Work</div> <div style="width: 50%;"><input type="checkbox"/> Temporary Disability</div> <div style="width: 50%;"><input type="checkbox"/> Recordable Workday Case Involving Restricted Duty</div> <div style="width: 50%;"><input type="checkbox"/> Permanent Total Disability</div> <div style="width: 50%;"><input type="checkbox"/> Other Recordable Case</div> <div style="width: 50%;"><input type="checkbox"/> Recordable First Aid Case</div> <div style="width: 50%;"><input type="checkbox"/> Permanent Partial Disability</div> <div style="width: 50%;"><input type="checkbox"/> Non-Recordable Case</div> <div style="width: 50%;"><input type="checkbox"/> No Injury</div> </div>			
Where There Days Lost: (Check/Bold) <input type="checkbox"/> Yes <input type="checkbox"/> No	Where There Days Hospitalized: (Check/Bold) <input type="checkbox"/> Yes <input type="checkbox"/> No	Where There Days Restricted Duty: (Check/Bold) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Part of Body Affected:			
Nature of Injury or Illness:			
Event or Exposure:			
Source of Injury or Illness:			
General Location Description:			
Injury Activity Code:			

4. License (if applicable) Person #		
Are Appropriate License and Certification/Medical Current: (Check/Bold) <input type="checkbox"/> Yes <input type="checkbox"/> No Describe or Explain:		
Attach Image of License or Certification Name/Description:	Date Added:	Uploaded By:
5. Training		
Was all the contract-required training provided to the employee: (Check/Bold) <input type="checkbox"/> Yes <input type="checkbox"/> No Explain:		
6. Attached Documents		
Attached Documents Name/Description:	Date Added:	Uploaded By:

7

4. License (if applicable) **Property Damage**

 Are Appropriate License and Certification/Medical Current: (Check/Bold) ☐ Yes ☐ No

Describe or Explain:

 Attach Image of License or Certification
 Name/Description:

Date Added:

Uploaded By:

5. Training

 Was all the contract-required training provided to the employee? (Check/Bold) ☐ Yes ☐ No

Explain:

CONTRACTOR INCIDENT REPORT SYSTEM (CIRS) INSTRUCTIONS

Complete Only Sections Appropriate to Incident (Rev. 03/11).

NOTE: THE ATTACHED CIRS FORM IS TO BE USED BY CONTRACTORS TO RECORD THE RESULTS OF THEIR ACCIDENT/INCIDENTS INVESTIGATIONS AND SHALL BE PROVIDED TO THE CONTRACTING OFFICER WITHIN THE REQUIRED TIMEFRAMES.

GENERAL. Complete a separate report for each person who was injured in the accident pages 5-6. A report needs to be completed for all OSHA recordable accidents and property damage cases. Please type or print legibly. Appropriate items shall be Checked/Bolded, non-applicable sections shall be marked "N/A". If additional space is needed, provide the information on a separate sheet of paper and attach to the completed form.

Mark the report: (Check/Bold)

Initial: If this form is being used as initial notification of a Fatality or High Visibility Mishap. The initial form is due within 4 hours of a serious accident. A form marked 'Follow-up' or 'Final' is required within 5 days.

Follow-Up: If you are providing additional information on a report previously submitted.

Final: If you are providing a completed report and expect no changes.

Incident Information

Section 1 Contract Information – Incident Information

Prime Contractor: Name as it appears on contract documents.

Cage Code: If known.

Contract Number: Number as it appears on the contract documents.

Installation: Name of installation where incident occurred.

Task Order #: Insert number if applicable.

Contracting Activity/ROICC Office: Enter the name and address of the Contracting Office administering the contract under which the mishap took place (e.g. ROICC MCBH, ROICC NORFOLK, PWC GUAM, etc.).

Contractor Contact Information: (Contractor point of contact information for the individual responsible for completing the form) Self Explanatory

Section 2 Incident Type: Check/Bold most applicable category, if you select Industrial you must Check/Bold at least one additional category from the **Industrial Incident Additional Information Section**.

Section 3 General Information Incident Information

Date of Accident: Enter the month, day, and year of accident.

Time of Accident: Enter the local time of accident in military time. Example: 14:30 hrs (not 2:30 p.m.).

Describe the Accident in Detail in your words: Fully describe the accident in the space provided. If property damage involved, give estimated dollar amount of damage and/or repair costs involved. If additional space is needed continue on a separate sheet and attach to this report. Give the sequence of events that describe what happened leading up to and including the accident. Fully identify personnel and equipment involved and their role(s) in the accident. Ensure that relationships between personnel and equipment are clearly specified. Ensure questions below regarding direct cause(s), indirect cause(s), and actions taken are answered. **NOTE!** Review questions in Section 4 (Fully Explain What Allowed or Caused the Incident - Incident Information) below before completing.

Exact Location of Accident: Enter facts needed to locate the accident scene (e.g. installation/project name, building/room number, street, direction and distance from closest landmark, etc.).

Were Hazardous Material(s) Involved Yes No

If Yes, Explain What Hazardous Materials Were Involved and Why: Check or Bold appropriate block and list name(s) and quantities of hazardous materials spilled/released during the mishap. List why the hazardous chemicals were being used.

Activity at the time of incident: What type of work/task was being performed by the injured when the injury took place or property damage occurred.

Personal Protective Equipment– Check/Bold appropriate items and list PPE which was being used by the injured person at the time of the accident (e.g. protective clothing, shoes, glasses, goggles, respirator, safety belt, harness, etc.)

Section 4 Fully Explain What Allowed or Caused the Incident - Incident Information

Direct Cause(s): The direct cause is that single factor which most directly lead to the accident. See examples below.

Indirect Cause(s): Indirect cause are those factors, which contributed to, but did not directly initiate the occurrence of the accident.

Examples for Direct and Indirect Cause:

1. Employee was dismantling scaffold and fell 12 feet from unguarded opening.

Direct cause: Failure to provide fall protection at elevation

Indirect causes: Failure to enforce safety requirements: improper training/motivation of employee (possibility that employee was not knowledgeable of fall protection requirements or was lax in his attitude toward safety); failure to ensure provision of positive fall protection whenever elevated; failure to address fall protection during scaffold dismantling in phase hazard analysis.

2. Private citizen had stopped his vehicle at intersection for red light when vehicle was struck in rear by contractor vehicle. (note contractor vehicles was in proper safe working condition.)

Direct cause: Failure of contractor driver to maintain control of and stop contractor vehicle within safe distance.

Indirect cause: Failure of employee to pay attention to driving (defensive driving).

Additional Action Taken: Fully describe all the actions taken, anticipated, and recommended to eliminate the cause(s) and prevent reoccurrence of similar accidents/illnesses. Continue in the additional box and or on additional sheets of paper if necessary, to fully explain and attach to the completed report form.

Please Include a Begin Date and Estimated Completion Date in Description

(1) Begin: Enter the date when the corrective action(s) identified above will begin.

(2) Est. End Date - Enter the date when the corrective action(s) identified above will be completed.

Section 5 Contributing Factors Incident Information: Check/Bold appropriate items fill in information where required
Other Contributing Factors: Describe in detail any additional contributing factors not listed in previous information provided.

Section 6 Attached Documents: Provide the appropriate information for each document/file attached or uploaded.

Injured Data Person #

Complete Pages 5 and 6 for each injured person At the upper right hand corner of page 5 and 6 differentiate between each person by using a numerical value (e.g. Person #1, Person #, Person #3, etc.)

Section 1 Injured Data: Fill in all applicable information, Check/bold appropriate responses.

Section 2 General Information:

Check/bold appropriate responses

Section 3 Injury/Illness Fatality Information: Check/bold appropriate responses

Part of Body Affected: Enter the most appropriate primary and when applicable, secondary, etc. body part(s) affected (e.g. arm: wrist: abdomen: single eye; jaw: both elbows: second finger: great toe: collar bone: kidney, etc.).

Nature of Injury/Illness: Describes the manner in which the injury or illness was inflicted or produced. It attempts to answer the broad question of “how” work injuries and illnesses occurred. (e.g. Fall, Struck By, Caught By, Repetitive Motion, Rubbed or Abraded By, etc.)

Event or Exposure: Describes what was produced by the injury or illness was produced or inflicted. (e.g. Infectious Parasitic Diseases, Traumatic Injuries and Disorders, Open Wounds, Burns, Intracranial Injuries, etc.)

Source of Injury Illness: Identifies the object, substance, bodily motion, or exposure, which directly produced or inflicted the previously identified injury or illness. (e.g. Acids, Chemical Products, Furniture and Fixtures, Machinery, Structures and Surfaces, Tools Instruments and Equipment, etc.)

General Location Description: Describes where the injury occurred (e.g. Industrial Facilities, Operational Industrial Building Plant, Roadway, etc.)

Injury Activity Code: Describes what the injured person was doing when the injury occurred. (e.g. Operating Type of Equipment, Construction Activity Being Performed, Industrial Operation Being Conducted, etc.)

Section 4 License:

Are Appropriate License and Certification/Medical Current: Did the injured employee have the appropriate license/certification or medical evaluations completed to conduct the work/task being performed.

Describe/Explain: Describe the required (licensing/certification/medical evaluation) for job/task being performed, date when license was issued, and expiration date. (e.g. “Powdered Actuated Tools, Hilti DX-350, License issued 11/29/2011, expires 3-years from issue date.” “Respirator Semi Annual Medical Evaluation, conducted 12/30/2011, expires on 12/30/2013”, etc.)

Attach Image of License or Certification: Self-Explanatory

Section 5 Training:

Was all the contract-required training provided to the employee: Self-Explanatory

Explain: If no, to the previous questions explain why the employee was not trained.

Section 6 Attached Documents:

Self-Explanatory use this for photos, drawings, diagrams, or other relevant documents.

Property Damage

Section 1 Involved Person Data: Fill in all applicable information, Check/bold appropriate responses.

Section 2 Attached Documents:

Self-Explanatory use this for photos, drawings, diagrams, or other relevant documents.

Section 3 Property Damaged:

Check/bold appropriate responses. Other Headings Self-Explanatory.

Section 4 License:

Are Appropriate License and Certification/Medical Current: Did the equipment operator have the appropriate license/certification or medical evaluations completed to conduct the work/task being performed.

Describe/Explain: Describe the required (licensing/certification/medical evaluation) for job/task being performed, date when license was issued, and expiration date. (e.g. “State Issued Driver, License issued 11/29/2011, expires on MM/DD/YYYY” “Scissor Lift, JLG Model 260MRT conducted 12/30/2011, does not expire.”)

Attach Image of License or Certification: Self-Explanatory

Section 5 Training:

Was all the contract-required training provided to the employee: Self-Explanatory

EM385-1-1 (30NOV14) UFGS 103526 11/15
Activity Hazard Analysis (AHA)

Activity/Work Task	Overall Risk Assessment Code (RAC) (Use highest code)																																										
AHA Signature Log #																																											
Project Location																																											
Contract Number																																											
Date Prepared																																											
SSHO Signature																																											
Superintendent Signature																																											
QC Manager Signature																																											
Subcontractor Foreman Name:																																											
Signature:																																											
QA Reviewed by (Name/Title)																																											
Notes: (Field Notes, Review Comments, etc)		Risk Assessment Code (RAC) Matrix <table border="1"> <thead> <tr> <th rowspan="2">Severity</th> <th colspan="5">Probability</th> </tr> <tr> <th>Frequent</th> <th>Likely</th> <th>Occasional</th> <th>Seldom</th> <th>Unlikely</th> </tr> </thead> <tbody> <tr> <td>Catastrophic</td> <td>E</td> <td>E</td> <td>H</td> <td>H</td> <td>M</td> </tr> <tr> <td>Critical</td> <td>E</td> <td>H</td> <td>H</td> <td>M</td> <td>L</td> </tr> <tr> <td>Marginal</td> <td>H</td> <td>M</td> <td>M</td> <td>L</td> <td>L</td> </tr> <tr> <td>Negligible</td> <td>M</td> <td>L</td> <td>L</td> <td>L</td> <td>L</td> </tr> </tbody> </table>					Severity	Probability					Frequent	Likely	Occasional	Seldom	Unlikely	Catastrophic	E	E	H	H	M	Critical	E	H	H	M	L	Marginal	H	M	M	L	L	Negligible	M	L	L	L	L		
		Severity	Probability																																								
			Frequent	Likely	Occasional	Seldom	Unlikely																																				
		Catastrophic	E	E	H	H	M																																				
		Critical	E	H	H	M	L																																				
Marginal	H	M	M	L	L																																						
Negligible	M	L	L	L	L																																						
Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).					RAC CHART																																						
Probability: Likelihood the activity will cause a Mishap (Near Miss, Incident, or Accident). Identify as Frequent, Likely, Occasional, Seldom or Unlikely					E = Extremely High Risk																																						
Severity: The outcome if a mishap occurred. Identify as Catastrophic, Critical, Marginal, or Negligible					H = High Risk																																						
Step 2: Identify the RAC (probability vs. severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of the AHA					M = Moderate Risk																																						
					L = Low Risk																																						

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements

 Competent Person

 Signature

UFGS 013526 11/15 1.9 Government reserves the right to require the Contractor to revise and resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

UFGS 013526 1.9.1 Review the AHA list periodically (at least monthly) at supervisory safety meetings, update when procedures, scheduling or hazards change

UFGS 013526 1.9.2 Each employee performing work ... must review the AHA and sign a signature log for that AHA prior to starting work. The SSHO must maintain a signature log on site for every AHA.

Site Specific Project AHAs

Activity Hazard Analysis (AHA)

Activity/Work Task	BACK FILL & RESTORATION					Overall Risk Assessment Code (RAC) (Use highest code)			L	
AHA Signature Log #										
Project Location	Fairmont City, IL									
Contract Number	W912P918D0014									
Date Prepared	April 12, 2019									
SSHO Signature			Severity	Frequent	Likely	Occasional	Seldom	Unlikely		
Superintendent Signature			Catastrophic	E	E	H	H	M	M	
QC Manager Signature			Critical	E	H	H	M	L	L	
Subcontractor Foreman Name:			Marginal	H	M	M	L	L	L	
Signature:			Negligible	M	L	L	L	L	L	
QA Reviewed by (Name/Title)			Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).							RAC CHART
Notes: (Field Notes, Review Comments, etc)			Probability: Likelihood the activity will cause a Mishap (Near Miss, Incident, or Accident). Identify as Frequent, Likely, Occasional, Seldom or Unlikely							E = Extremely High Risk
			Severity: The outcome if a mishap occurred. Identify as Catastrophic, Critical, Marginal, or Negligible							H = High Risk
			Step 2: Identify the RAC (probability vs. severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of the AHA							M = Moderate Risk
										L = Low Risk

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Site-specific/Job-specific training for workers	Employees not trained in the safe execution of their tasks may harm themselves or others	- Use this Activity Hazard Analysis, Lead awareness training, site-specific training and any other applicable training as a means to train workers. NOTE: If the scope of work detailed below changes in any way, the SSHO will complete an AHA amendment detailing the new scope of work.	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Shield/Guard utilities	Burns and Fires (gas lines), electrocution or electrical fires (electrical lines), flooding and pressure (water lines), flooding and biohazards (sewage)	<ul style="list-style-type: none"> - Verify utilities previously located are in working order. - Exposed underground utilities shall be marked. - Each operator on the job should be aware of the location of all underground utilities, structures, tanks, etc. - Verify utility locations on each lift of backfill and exercise precaution when working near the utilities. - Ensure all utilities are in working order after backfilling is complete. 	L
Set up barricades and caution-off area.	Entry of unauthorized personnel Knocking down power lines	<ul style="list-style-type: none"> - Set up warning barricades or temp. fencing and caution off area where earthwork is ongoing to prevent the entry of unauthorized personnel. - Caution tape off power poles and guy wires, as necessary. - Use caution when operating heavy equipment near utility lines. 	L
Inspect Equipment	Equipment failure- or unsafe operation Fires, explosions- burns Backing over workers or running into equipment	<ul style="list-style-type: none"> - Inspect each piece of equipment prior to the start of each day. Use the checklist for that piece of equipment. - Make sure recommended preventive maintenance is being performed and a log maintained. - Lubrication points should show signs of recent maintenance. - A fire extinguisher is provided at the operator's compartment - Ensure that the backup alarm is fully operational 	L
Put on your personal protective equipment.	Head, foot, or eye injury Personnel being struck by equipment/trucks Hearing damage	<ul style="list-style-type: none"> - Workers entering the job site must wear a hard hat, safety glasses, high visibility vests or clothing, and safety-toed work boots AT ALL TIMES. - Wear gloves when handling sharp objects. - Do not wear clothing or jewelry that could easily get snagged or caught by equipment or machinery. 	L
Excavating - Hand digging	Pulls and strains from digging Foot, hand, or leg injuries	<ul style="list-style-type: none"> - Don't be too aggressive when moving heavy or wet material. - Use proper lifting techniques. - Make sure that wooden handles for tools are secured tightly in the tool and are free of cracks and splinters. - Wear appropriate PPE 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Place fill and compaction	Inability to see clearly Falling from the machine Hazardous noise, hearing loss Crushed by Slips, trips, and falls	<ul style="list-style-type: none"> - Keep the windshield and other glazing clean so that your view is unobstructed. - Make sure the windshield wipers work and all mirrors are properly adjusted. - Look in the direction of travel. - Wear your seat while operating the machine. - Employees shall not ride in buckets or on any part of the machine other than the seat. - Wear foam ear plugs when working on equipment where sound pressure levels are between 85 dB(A) and 115 dB(A) time-weighted avg. over 8 hrs. When sound levels exceed 115 dB(A) foam ear plugs and earmuffs shall be worn. - Mechanical vibration increases the likelihood of an injury. - Do not operate a compactor in an unprotected trench. - Be sure to backfill in proper lifts to avoid settling. 	L
Grading	Crushed or struck by moving equipment Creation of a low, water collecting area	<ul style="list-style-type: none"> - Keep the windshield and other glazing clean so that your view is unobstructed. - Make sure the windshield wipers work and all mirrors are properly adjusted. - Look in the direction of travel. - Wear your seat while operating the machine. - Employees shall not ride in buckets or on any part of the machine other than the seat. - Wear foam ear plugs when working on equipment where sound pressure levels are between 85 dB(A) and 115 dB(A) time-weighted avg. over 8 hrs. When sound levels exceed 115 dB(A) foam ear plugs and earmuffs shall be worn. - A competent person shall ensure all grading is done properly and that all water will drain correctly after grading. - Team lift heavy or awkward materials. - Use safe lifting techniques. - Use material handling aids whenever possible. - Be aware of your surroundings and watch where you are going while carrying material. - Never move materials above coworkers. - Always check tools prior to each use. - Always use the correct tool for the job. - Use caution when replanting as not to come into contact with any underground utilities. 	L
Install vegetation	Strains from lifting Striking and injuring co-workers with materials Crushed by Cuts	<ul style="list-style-type: none"> - Team lift heavy or awkward materials. - Use safe lifting techniques. - Use material handling aids whenever possible. - Be aware of your surroundings and watch where you are going while carrying material. - Never move materials above coworkers. - Always check tools prior to each use. - Always use the correct tool for the job. - Use caution when replanting as not to come into contact with any underground utilities. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Getting on and off the machine	Slipping and falling Crushed or pinched injuries from moving equipment	<ul style="list-style-type: none"> - Use three points of contact with the machine at all times. - Be especially careful in the rain or mud. - Whenever the machine is unattended the bucket/blades are lowered, brakes set, controls neutralized, and the engine is shut down. 	L
Roll up Equipment; Clean-up	Slipping, Tripping, or Falling	<ul style="list-style-type: none"> - Store equipment out of the way. - Clean up work area at the end of each day. - Stage equipment and materials in designated areas. - Put vehicles parked in correct locations and stored properly - Never throw or drop scrap and debris in the work area. - Place combustibles in approved containers. 	L
Working in hot weather	Heat Stroke, Heat Exhaustion, Heat Cramps Sunburn	<ul style="list-style-type: none"> - Make sure you always have an adequate supply of cold water available. If your water supply is running low talk to your supervisor. - Take scheduled cool down breaks. - Provide ventilation or air-cooling equipment for enclosed work areas. - Use sunscreen as needed. - Respond quickly and decisively in case of an accident. Call 911 immediately. - Know where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Responding to an emergency	Delayed emergency response- further injury or loss of life	<ul style="list-style-type: none"> - Respond quickly and decisively in case of an accident. - Know where the emergency numbers are posted, where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Administering First Aid	Exposure to bloodborne pathogens	<ul style="list-style-type: none"> - Use appropriate PPE when administering first aid such as gloves, masks, eye protection and/or resuscitation equipment especially when blood is present - Wash after contact with blood or other body fluids - Dispose of soiled material in a labeled leak-proof container 	L

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
Compaction equipment	Operator Training Review of Manufacturer's Operating Manual when necessary Activity Hazard Analysis: Review utility locations and use precaution with each new step or lift or backfill material	- Conduct Daily Inspection prior to use
Hand Tools	Trained by competent person before use.	- Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately.
Field/ Project or Dump/Work Truck	Valid Driver's License Required. Valid Insurance Certificate Required. Review Owner's Manual when necessary.	- Activity Hazard Analysis Review for each worker. - Fire extinguisher with each truck. - Vehicle must be properly maintained and in good working order. - Owner's Manual must be with vehicle. - Inspect daily prior to each shift.
Personal Protective Equipment (PPE)	All workers will be trained in the proper donning and use of PPE before beginning work.	- Inspect ALL PPE prior to each use. Any damaged PPE will be replaced immediately.
First Aid Kits	A MINIMUM of 2 individuals trained in CPR/First Aid will be on-site and available to render aid at all times.	- First Aid Kits will be inspected monthly for damage and/or missing items which shall be replaced immediately.
Hand Tools	Trained by site supervisor before use.	- Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately.
Skidsteer	Operator Training and Certification/License Review of Manufacturer's Operating Manual Activity Hazard Analysis Review: Use precaution around all utilities	- Conduct Daily Inspection prior to use - including Back-up Alarm and Maintenance Records. - Operators Manual shall be on all equipment. - Equipment will be equipped with Fire Extinguisher.

Competent Person

Signature

Activity/Work Task: BACK FILL & RESTORATION
Contract Name: OAZ
Contract Number: W912P918D0014

Competent Persons

Name: Signature: Date:

Meeting Attendees

Name: Signature: Date:

Activity Hazard Analysis (AHA)

Activity/Work Task	EXCAVATION OF CONTAMINATION					Overall Risk Assessment Code (RAC) (Use highest code)	M
AHA Signature Log #							
Project Location	Fairmont City, IL						
Contract Number	W912P918D0014						
Date Prepared	April 12, 2019						
SSHO Signature							
Superintendent Signature							
QC Manager Signature							
Subcontractor Foreman Name:	James Christopher						
Signature:							
QA Reviewed by (Name/Title)	Ann Jacobs						
Notes: (Field Notes, Review Comments, etc)							

Risk Assessment Code (RAC) Matrix	
Probability	
Frequent	Likely
E	E
E	H
H	M
M	L
M	L
L	L
Unlikely	

Frequent	Likely	Occasional	Seldom	Unlikely
E	E	H	H	M
E	H	H	M	L
H	M	M	L	L
M	L	L	L	L

Severity	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	H	H	M
Critical	E	H	M	L
Marginal	H	M	L	L
Negligible	M	L	L	L

Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).	Step 2: Review each Hazard with identified safety "Controls". Determine RAC (see above).	Step 3: Review each Hazard with identified safety "Controls". Determine RAC (see above).
Probability: Likelihood the activity will cause a Mishap (Near Miss, Incident, or Accident). Identify as Frequent, Likely, Occasional, Seldom or Unlikely	Severity: The outcome if a mishap occurred. Identify as Catastrophic, Critical, Marginal, or Negligible	Step 2: Identify the RAC (probability vs. severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of the AHA

RAC CHART	E = Extremely High Risk	H = High Risk	M = Moderate Risk	L = Low Risk
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Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Site-specific/Job-specific training for workers	Personnel not trained in the safe execution of their tasks may harm themselves or others	- Use this Activity Hazard Analysis, Lead awareness training, site-specific training and any other applicable training as a means to train workers. - All personnel must have 40 hr. HAZWOPER training NOTE: If the scope of work detailed below changes in any way, the SSHO will complete an AHA amendment detailing the new scope of work.	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Locate utilities	Underground lines: - high pressure lines - water, sewer, and communication lines Aerial utility lines explosion and fire private power or propane lines electrocution or shock	<ul style="list-style-type: none"> - Call JULIE (811) before digging. Have them locate and mark all underground utilities. - A third party utility locating contractor may be used to locate and mark private lines. - Pot-hole for utilities to locate the exact location before beginning a full excavation. Hand excavate when within 2 feet of a utility so that it is not damaged. - Locate and, when needed, mark aerial utility lines. - Each operator on the job should be aware of the location of all underground utilities, structures, tanks, etc. - Workers entering the job site must wear a hard hat, safety glasses, high visibility vest (or clothing) and safety-toed work boots AT ALL TIMES. - Wear gloves when handling sharp objects. - Do not wear clothing or jewelry that could easily get snagged or caught by equipment or machinery. 	L
Put on your personal protective equipment.	Head, foot, hand, or eye injury Struck by hazards Hearing damage	<ul style="list-style-type: none"> - Set up warning barricades or temp. fencing, and caution off area where earthwork is ongoing to prevent the entry of unauthorized personnel. - Caution tape off power poles and guy wires as needed. Always be careful when operating heavy equipment near utility lines. 	L
Set up barricades and caution-off area.	Entry of unauthorized personnel Knocking down power lines	<ul style="list-style-type: none"> - Inspect each piece of equipment prior to the start of each day. Use the checklist for that piece of equipment. - Make sure recommended preventive maintenance is being performed and a log maintained. - Lubrication points should show signs of recent maintenance. - A fire extinguisher is provided at the operator's compartment - Ensure that the backup alarm is fully operational 	L
Inspect Equipment	Equipment failure- or unsafe operation Fires, explosions- burns Backing over workers or running into equipment	<ul style="list-style-type: none"> - Use only approved metal safety cans or tanks to store and dispense fuel. - Place oily or fuel soaked rags and other combustibles in approved containers. - DO NOT SMOKE WHILE RE-FUELING - For gasoline powered equipment attach the grounding wire from the fuel tank to the equipment before fueling. 	L
Re-fuel equipment	Fires, explosions- burns		L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Getting on and off the machine	Slipping and falling Crushed or pinched injuries from moving equipment	<ul style="list-style-type: none"> - Use three points of contact with the machine at all times. - Be especially careful in the rain or mud. - Whenever the machine is unattended the bucket/blades are lowered, brakes set, controls neutralized, and the engine is shut down. - Before beginning each phase of work the CQCSM will explain to the workers what needs to be done and how the work will proceed. - Be aware of your surroundings while moving materials, watch where you are going. - Never move materials over or above workers. - Ground personnel and operators shall maintain visual or verbal communication. - The proper route for hauling will be given to all applicable personnel. 	L
Layout, communication, and preparatory instructions	Lack of coordination between workers- Mistakes, Injuries	<ul style="list-style-type: none"> - Be aware of the location of workers in and around the excavation at all times. - Stand away from equipment that is loading or unloading excavated material. - Never move excavated material over or above workers. 	L
Excavating - Heavy Equipment	Striking and injuring co-workers with equipment or material Struck by falling material Roll over or equipment failure	<ul style="list-style-type: none"> - Do not allow workers to stand or walk under the elevated portion of the machine. - Know the limits of your machine. Do not push the limits of the machine. - Stay away from the face of any cut where you could fall to the lower level. - Stay clear of the machine swing radius. - Never approach operating machinery without making contact with the operator. - Don't be too aggressive when moving heavy or wet material. 	M
Excavating - Hand digging	Pulls and strains from digging Foot, hand or leg injuries	<ul style="list-style-type: none"> - Use proper lifting techniques. - Make sure that wooden handles for tools are secured tightly in the tool and are free of cracks and splinters. - Wear proper PPE. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Working in hot weather	Heat Stroke, Heat Exhaustion, Heat Cramps Sunburn	<ul style="list-style-type: none"> - Make sure you always have an adequate supply of cold water available. If your water supply is running low talk to your supervisor. - Take scheduled cool down breaks. - Provide ventilation or air cooling equipment for enclosed work areas. - Use sunscreen, when needed. - Respond quickly and decisively in case of an accident. - Know where the emergency numbers are posted, where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Roll up Equipment & Clean-up	Slipping, Tripping, or falling, and Delayed Egress Contaminated material spreading	<ul style="list-style-type: none"> - Store equipment out of the way. - Clean up work area at the end of each shift. - Stage equipment and materials in designated lay down areas. - Never throw or drop scrap and debris in the work area. - Place combustibles in approved containers. - If needed, decontaminate. 	L
Responding to an emergency	Delayed emergency response- further injury or loss of life	<ul style="list-style-type: none"> - Respond quickly and decisively in case of an accident. - Know where the emergency numbers are posted, where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Administering First Aid	Exposure to blood-borne pathogens	<ul style="list-style-type: none"> - Use appropriate PPE when administering first aid such as gloves, masks, eye protection and/or resuscitation equipment especially when blood is present - Wash after contact with blood or other body fluids - Dispose of soiled material in a labeled leak-proof container 	L
Handling/Disposal	Spreading Contamination Traffic collisions	<ul style="list-style-type: none"> - Hazardous material waste shall be hauled to the FA and dumped in the consolidation area. - All hazardous waste shall be hauled in accordance with all Federal, State, local, and contractual requirements. - Drivers shall obey all traffic safety laws and requirements. 	L

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
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Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
Hand Tools	Trained by competent person before use.	<ul style="list-style-type: none"> - Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately.
Field/Work Truck	Valid Driver's License Required. Valid Insurance Certificate Required. Review Owner's Manual. Activity Hazard Analysis Review for each worker.	<ul style="list-style-type: none"> - Activity Hazard Analysis Review for each worker. - Vehicle must be properly maintained and in good working order. - Owner's Manual must be with vehicle. - Inspect daily prior to each shift. - Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order. - Daily Inspection prior to use.
Water Truck	Valid Driver's License Required Valid Insurance Certificate Required. Activity Hazard Analysis Review for each worker.	<ul style="list-style-type: none"> - Conduct Daily Inspection prior to use - including Back-up Alarm and Maintenance Records. - Operators Manual shall be on all equipment. - Equipment will be equipped with Fire Extinguisher.
Skidsteer	Operator Training and Certification/License Review of Manufacturer's Operating Manual Activity Hazard Analysis Review	<ul style="list-style-type: none"> - Conduct Daily Inspection prior to use - including Back-up Alarm and Maintenance Records. - Operators Manual shall be on all equipment. - Equipment will be equipped with Fire Extinguisher.
Excavator	Operator Training and Certification/License Review of Manufacturer's Operating Manual Activity Hazard Analysis Review	<ul style="list-style-type: none"> - Conduct Daily Inspection prior to use - including Back-up Alarm and Maintenance Records. - Operators Manual shall be on all equipment. - Equipment will be equipped with Fire Extinguisher. - Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order.
Dump Truck	Valid Driver's License Required Valid Insurance Certificate Required.	<ul style="list-style-type: none"> - Inspect ALL PPE prior to each use. Any damaged PPE will be replaced immediately.
Personal Protective Equipment (PPE)	Activity Hazard Analysis Review for each worker. All workers will be trained in the proper donning and use of PPE before beginning work.	<ul style="list-style-type: none"> - First Aid Kits will be inspected monthly for damage and/or missing items which shall be replaced immediately.
First Aid Kits	A MINIMUM of 2 individuals trained in CPR/First Aid will be on-site at all times.	

Competent Person

Signature

Activity/Work Task: EXCAVATION OF CONTAMINATION

Contract Name: OAZ

Contract Number: W912P918D0014

Competent Persons

Name: Signature: Date:

Meeting Attendees

Name: Signature: Date:

Activity/Work Task		TRANSPORTATION		Activity Hazard Analysis (AHA)		Overall Risk Assessment Code (RAC)	
AHA Signature Log #				Risk Assessment Code (RAC) Matrix		(Use highest code)	
Project Location		Fairmont City, IL		Probability			
Contract Number		W912P918D0014					
Date Prepared		April 12, 2019					
SSHO Signature		James Christopher					
Superintendent Signature		Mitchell Jenkins					
QC Manager Signature							
Subcontractor Foreman Name:							
Signature:							
QA Reviewed by (Name/Title)							
Notes: (Field Notes, Review Comments, etc)							
		Severity	Frequent	Likely	Occasional	Seldom	Unlikely
		Catastrophic	E	E	H	H	M
		Critical	E	H	H	M	L
		Marginal	H	M	M	L	L
		Negligible	M	L	L	L	L
		Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).					
		RAC CHART					
		E = Extremely High Risk					
		H = High Risk					
		M = Moderate Risk					
		L = Low Risk					

Specific Anticipated Hazards

Job Steps (Work Sequences)	Controls	RAC
Employees not trained in the safe execution of their tasks may harm themselves or others	<ul style="list-style-type: none"> - Use this Activity Hazard Analysis, lead awareness training, site-specific training, and any other applicable training as a means to train workers. - All personnel shall have 40 hr HAZWOPER training. NOTE: If the scope of work detailed below changes in any way, the SSHO will complete an AHA amendment detailing the new scope of work.	L
Site-specific/Job-specific training for workers		

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Review Approved Transportation and Disposal Plan	Lack of Coordination Accidents involving vehicles/pedestrians Serious Injury / Death	<ul style="list-style-type: none"> - Prior to commencement of operations involving transportation, submit a Transportation and Disposal Plan for approval. - Prior to implementation of the Transportation and Disposal Plan, obtain any required permits from local or state authorities. - Use barricades and signage that are highly visible and at the least meet the minimum DOT requirements. - Workers entering the job site must wear a hard hat, safety glasses, reflective vest and safety-toed work boots AT ALL TIMES. - Wear gloves when handling sharp objects. - Do not wear clothing or jewelry that could easily get snagged or caught by equipment or machinery. 	L
Put on your personal protective equipment for Traffic Control	Head, foot, or eye injury Hearing damage Not visible to traffic / Vehicles Struck by / Run over Personnel being struck by equipment/trucks Serious injury / Death	<ul style="list-style-type: none"> - Be sure to look both directions before pulling off site into traffic. - Check equipment before exiting site. Assure that equipment is locked and in a safe area. - Close and lock the gate onto the site. Either take your key with you or if needed, return key to lock box. - Ensure fencing is erect around excavation areas at residential properties. - Assure the gate is closed and locked before leaving site for the day. 	L
Site Security - Entry and Egress	Blind spots Pulling into traffic equipment access/tampering site access to unauthorized personnel	<ul style="list-style-type: none"> - Set up warning barricades or temp. fencing and caution off area where earthwork is ongoing to prevent the entry of unauthorized personnel. - Caution tape off power poles and guy wires as needed. - Use caution when operating heavy equipment near utility lines. 	L
Set up barricades and caution-off area.	Entry of unauthorized personnel Knocking down power lines traffic collisions	<ul style="list-style-type: none"> - Prior to installation, stage signs and other devices along the shoulder so that they can be quickly moved into position. - As needed, install advance warning signs beginning with signs located on the right shoulder first. Then working with the traffic flow towards the Work Area. - Install traffic control devices in the Buffer Area and then the Work Area. - Review the installation for good driver navigation and make appropriate adjustments. 	L
Install Traffic Control Devices in Work Zones	Lack of adequate traffic control Errant vehicles Struck by / Run over Serious injury / Death		

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Traffic Control	Struck by moving vehicles Vehicle collisions	<ul style="list-style-type: none"> - Use spotters as needed where visibility is limited. - Provide a flag person when operations create a traffic hazard. - Flag persons shall wear an approved high visibility vest. - Ensure spotters and equipment operators, to include truck drivers, have either verbal or visual communication. - Only Qualified Persons shall be appointed by a competent person participate in flagging operations. - Inventory the devices you plan to use. Make sure that they are all clean and in good working order. - Discuss safe procedures and proper personal protective equipment with the team. - Make sure workers have proper training prior to assignment. - Identify appropriate emergency contacts. - Notify appropriate law enforcement, as needed. - stand on the shoulder adjacent to the road or in the closed lane prior to stopping the road users. - be clearly visible to the first approaching road users at all times and should also remain visible to other road users. - always stand alone and never permit a group of workers to gather around the flagging station. - communicate specific instructions clearly, firmly, and courteously. - move and maneuver quickly in order to avoid danger from errant vehicles or equipment. - control signaling devices in order to provide clear and positive guidance to drivers approaching work zone. - be able to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury. - NOT TALK OR TEXT ON A CELL PHONE while performing traffic control operations. 	L
Flagging Operations Advance Preparation	Lack of Communication Lack of Training Serious injury / Death	<ul style="list-style-type: none"> - Inventory the devices you plan to use. Make sure that they are all clean and in good working order. - Discuss safe procedures and proper personal protective equipment with the team. - Make sure workers have proper training prior to assignment. - Identify appropriate emergency contacts. - Notify appropriate law enforcement, as needed. - stand on the shoulder adjacent to the road or in the closed lane prior to stopping the road users. - be clearly visible to the first approaching road users at all times and should also remain visible to other road users. - always stand alone and never permit a group of workers to gather around the flagging station. - communicate specific instructions clearly, firmly, and courteously. - move and maneuver quickly in order to avoid danger from errant vehicles or equipment. - control signaling devices in order to provide clear and positive guidance to drivers approaching work zone. - be able to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury. - NOT TALK OR TEXT ON A CELL PHONE while performing traffic control operations. 	L
Flagging / Signaling Operations	Not being visible to approaching vehicles Out-of-control vehicles Caught between Struck by/ Run over Serious Injury / Death	<ul style="list-style-type: none"> - Inventory the devices you plan to use. Make sure that they are all clean and in good working order. - Discuss safe procedures and proper personal protective equipment with the team. - Make sure workers have proper training prior to assignment. - Identify appropriate emergency contacts. - Notify appropriate law enforcement, as needed. - stand on the shoulder adjacent to the road or in the closed lane prior to stopping the road users. - be clearly visible to the first approaching road users at all times and should also remain visible to other road users. - always stand alone and never permit a group of workers to gather around the flagging station. - communicate specific instructions clearly, firmly, and courteously. - move and maneuver quickly in order to avoid danger from errant vehicles or equipment. - control signaling devices in order to provide clear and positive guidance to drivers approaching work zone. - be able to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury. - NOT TALK OR TEXT ON A CELL PHONE while performing traffic control operations. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Drive Vehicle - Site	Striking workers or pedestrians Blind spots Backing into traffic	<ul style="list-style-type: none"> - Do a walk around directly prior to exiting and moving the vehicle. - Ensure that backup warning device is fully functional prior to backing. - Honk horn twice before backing. Make sure they see you. - If backing, ALWAYS ask for the assistance of a spotter. - If needed, decontaminate vehicle prior to exiting. 	L
Street Sweeping	Dust inhalation Tracking contamination off-site Struck by	<ul style="list-style-type: none"> - Ensure that machine does not allow fugitive dust to exit. - Use proper vehicle operation safety. - If needed use a flagger/spotter. - Ensure material contained by sweeping machinery. - Ensure that all contamination has been removed from roadway. 	L
Remove Traffic Control Devices in Work Zone	Lack of adequate traffic control Errant Vehicles Struck by / Run over Serious injury / Death	<ul style="list-style-type: none"> - Make sure that Work Area is clear and cleaned before removing traffic control devices. - Remove traffic control devices from the Work Area followed by the Buffer Area. - Remove traffic control devices from the Transition area, working against the flow of traffic. - Remove advanced warning signs from the Advance Warning Area. 	L
Working in hot weather	Heat Stroke, Heat Exhaustion, Heat Cramps Sunburn	<ul style="list-style-type: none"> - Make sure you always have an adequate supply of cold water available. If your water supply is running low talk to your supervisor. - Take scheduled cool down breaks. - Provide ventilation or air cooling equipment for enclosed work areas. - Use sunscreen as needed. - Respond quickly and decisively in case of an accident. Call 911 immediately. - Know where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Responding to an emergency	Delayed emergency response- further injury or loss of life	<ul style="list-style-type: none"> - Respond quickly and decisively in case of an accident. Call 911 immediately. - Know where the emergency numbers are posted, where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Administering First Aid	Exposure to blood-borne pathogens	<ul style="list-style-type: none"> - Use appropriate PPE when administering first aid such as gloves, masks, eye protection and/or resuscitation equipment especially when blood is present - Wash after contact with blood or other body fluids - Dispose of soiled material in a labeled leak-proof container 	L

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
Personal Protective Equipment (PPE)	All workers will be trained in the proper donning and use of PPE before beginning work.	- Inspect ALL PPE prior to each use. Any damaged PPE will be replaced immediately.
First Aid Kits	A MINIMUM of 2 individuals trained in CPR/First Aid will be on-site at all times.	- First Aid Kits will be inspected monthly for damage and/or missing items which shall be replaced immediately.
Field/Work Truck	Valid Driver's License Required. Valid Insurance Certificate Required. Review Owner's Manual. Activity Hazard Analysis Review for each worker.	<ul style="list-style-type: none"> - Activity Hazard Analysis Review for each worker. - Vehicle must be properly maintained and in good working order. - Owner's Manual must be with vehicle. - Inspect daily prior to use.
Dump Truck	Valid Driver's License Required Valid Insurance Certificate Required. Activity Hazard Analysis Review for each worker.	<ul style="list-style-type: none"> - Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order.
Hand Tools	Trained by competent person before use.	<ul style="list-style-type: none"> - Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately.

Competent Person

Signature

Activity/Work Task: TRANSPORTATION
Contract Name: OAZ SURROUNDING PROPERTIES REMEDIATION
Contract Number: W912P918D0014

Competent Persons

Name: Signature: Date:

Meeting Attendees

Name: Signature: Date:

Activity Hazard Analysis (AHA)

Activity/Work Task	SITE PREPERATION					Overall Risk Assessment Code (RAC) (Use highest code)					L
AHA Signature Log #											
Project Location	Fairmont City, IL										
Contract Number	W912P918D0014										
Date Prepared	April 12, 2019										
SSHO Signature											
Superintendent Signature											
QC Manager Signature											
Subcontractor Foreman Name:	James Christopher										
Signature:											
QA Reviewed by (Name/Title)	Ann Jacobs										
Notes: (Field Notes, Review Comments, etc)											

		Risk Assessment Code (RAC) Matrix					Probability	Overall Risk Assessment Code (RAC)
		Severely	Frequent	Likely	Occasional	Seldom		
Catastrophic		E	E	E	H	H	Unlikely	
Critical		E	E	H	H	M		
Marginal		H	H	M	M	L		
Negligible		M	M	L	L	L		
Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).								RAC CHART
Probability: Likelihood the activity will cause a Mishap (Near Miss, Incident, or Accident). Identify as Frequent, Likely, Occasional, Seldom or Unlikely Severity: The outcome if a mishap occurred. Identify as Catastrophic, Critical, Marginal, or Negligible								E = Extremely High Risk
Step 2: Identify the RAC (probability vs. severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of the AHA								H = High Risk
								M = Moderate Risk
								L = Low Risk

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Site-specific/Job-specific training for workers	Employees not trained in the safe execution of their tasks may harm themselves or others	- Use this Activity Hazard Analysis, Lead awareness training, Site-specific training and any other applicable training as a means to train workers. - All personnel must have 40 HAZWOPER training. NOTE: If the scope of work detailed below changes in any way, the SSHO will complete an AHA amendment detailing the new scope of work.	L
Put on your personal protective equipment.	Head, foot, or eye injury Personnel being struck by equipment/trucks Hearing damage	- Workers entering the job site must wear a hard hat, safety glasses, reflective vests and safety-toed work boots AT ALL TIMES. - Wear gloves when handling sharp objects. - Do not wear clothing or jewelry that could easily get snagged or caught by equipment or machinery.	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Survey the Site	Overhead utility Lines Underground hazards Utilities Hazardous Agents in Soil	<ul style="list-style-type: none"> - Locate all overhead electrical lines and communication lines. Mark lines as needed. - Locate all underground utility markings and locations - Review documentation concerning possible hazardous materials/toxic agents in soil. - Call utility companies and/or other responsible authorities before you dig. Have them locate and mark all underground utilities. - Each operator on the job should be aware of the location of all underground utilities, structures, tanks, ect. 	L
Locate utilities	Private utilities Traffic biological hazards	<ul style="list-style-type: none"> - Ensure that fence is free from tears, rips or weak areas. - Wear gloves and other applicable PPE when installing. - Do not secure fencing without proper PPE. - Do not install fencing alone 	L
Install Silt Fence	Smashed fingers Cuts and scrapes	<ul style="list-style-type: none"> - Where there is a danger of surface water entering the work area install silt fence or place sand bags to prevent the water from reaching the area. 	L
Place sand bags for water control / Divert runoff	Water entering the contaminated/excavated area	<ul style="list-style-type: none"> - Set up warning barricades or temp. fencing and caution off area where earthwork is ongoing to prevent the entry of unauthorized personnel. - When necessary, tape power poles, and/or lines, and guy wires. 	L
Set up barricades and caution-off area.	Entry of unauthorized personnel Knocking down power lines	<ul style="list-style-type: none"> - Wear proper PPE, including gloves and protective footwear - Be careful to keep away from pinch-points. - Team lift heavy or awkward fencing sections. - Use safe lifting techniques. - Use material handling aids whenever possible. - Be aware of your surroundings and watch where you are going while carrying material. - Never move materials above coworkers. - Use caution and always wear proper PPE when cutting fence. 	L
Install Temporary Fencing	Strains from lifting Striking and injuring co-workers with materials Cuts Pinch points	<ul style="list-style-type: none"> - Only trained personnel, approved by a competent person, shall operate machinery. 	L
Train operator	Employees not trained in the safe execution of their tasks may harm themselves or others		L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Re-fuel equipment	Fires, explosions- burns	<ul style="list-style-type: none"> - Use only approved metal safety cans or tanks to store and dispense fuel. - Place oily or fuel soaked rags and other combustibles in approved containers. - DO NOT SMOKE WHILE RE-FUELING - For gasoline powered equipment attach the grounding wire from the fuel tank to the equipment before fueling. - Wear proper PPE including eye and face protection (when needed), ear protection, gloves, long sleeves, leg protection, protective footwear. - Do not fuel chain saw while running or while hot 	L
Brush and landscaping removal	Cuts, Abrasions Eye Injuries Injuries by equipment	<ul style="list-style-type: none"> - Hold chain saw with both hands during all cutting operations. - Chain saw MUST HAVE an automatic chain brake or kickback device. - Chain shall not move while engine is at idle. - NEVER cut above the operator's shoulder height. - Do not smoke around dried brush. - Use care when removing landscaping as to not damage property. 	L
Inspect Equipment	Equipment failure- or unsafe operation	<ul style="list-style-type: none"> - Inspect each piece of equipment prior to use. - Make sure preventive maintenance is being performed. - Lubrication points should show signs of recent maintenance. - A fire extinguisher is provided at the operator's compartment - Ensure that the backup alarm is fully operational 	L
Getting on and off the machine	Slipping and falling Crushed or pinched injuries from moving equipment	<ul style="list-style-type: none"> - Use three points of contact with the machine at all times. - Be especially careful in the rain or mud. - When the machine is unattended the platform is lowered, brakes set, controls neutralized, and the engine is shut down. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Operating Chain Saw and Felling trees	Binding / Kickback of Chain Saw Cuts, Abrasions Eye Injuries Hearing Damage Serious Injury/Death	<ul style="list-style-type: none"> - The operator shall hold the saw with both hands during all cutting operations. - Operators will wear personal protective equipment as prescribed by the designated authority. Eye, ear, hand, foot (safety shoes), and leg protection are required as a minimum unless specifically waived by the designated authority. - The chain saw must never be used to cut above the operator's shoulder height. - Chainsaw must have an automatic chain brake or kickback device. - The idle speed shall be adjusted so that the chain does not move when the engine is idling. - Before starting to cut, the operator must be sure of footing and must clear away brush or other materials that might interfere with cutting operations or escape route. - The operator will shut off the saw when carrying it over slippery surfaces, through heavy brush, and when adjacent to personnel. - Before cutting, the operator shall ensure trees are to be cleared, and no more than 4" DBH. 	L
Perform Preventative Maintenance	Inadvertent Engine Start Vehicle Movement Cuts/Scrapes/Burns Pinched/Smashed Appendages Eye Damage Hearing Damage Crush/Serious Injury	<ul style="list-style-type: none"> - Ensure the use of LOTO (Lock Out/Tag Out) procedures are followed. Remove key, remove battery cable. - Fully engage Parking Brake. - Wear all proper and required PPE, including eye wear, gloves, and face shield. 	L
Working in hot weather	Heat Stroke, Heat Exhaustion, Heat Cramps Sunburn, Heat stress	<ul style="list-style-type: none"> - Make sure you always have an adequate supply of cold water available. If your water supply is running low talk to your supervisor. - Take scheduled cool down breaks. - Provide ventilation or air cooling equipment for enclosed work areas. - Use sunscreen, as needed. - Be aware of the signs of heat stress and watch for them in yourself and coworkers. - Know where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Cold stress	Cold stress	Be aware of the symptoms of cold stress and watch for them in yourself and coworkers. Know who to contact if you or a coworker develops cold stress symptoms.	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Monitor Weather Conditions	Lightning Strike Severe Burns Electrocution Death	- Weather conditions shall be continually monitored.	L
Roll up Equipment & Clean-up	Slipping, Tripping, or falling. Spreading contaminated materials	- Store equipment out of the way. Roll up hoses and cords at end of day. - Clean up work area at the end of each shift. - Stage equipment in designated lay down areas. - Never throw or drop any debris in work area. - Place combustibles in approved containers.	L
Administering First Aid	Exposure to blood-borne pathogens	- Use appropriate PPE when administering first aid such as gloves, masks, eye protection and/or resuscitation equipment especially when blood is present - Wash after contact with blood or other body fluids - Dispose of soiled material in a labeled leak-proof container	L

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
Hand Tools	Trained by competent person before use.	- Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately. - Conduct Daily Inspection prior to use.
Excavator	Operator Training and Certification/License. Review of Manufacturer's Operating Manual. Activity Hazard Analysis Review.	- Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order. - Daily Inspection prior to use.
Water Truck	Valid Driver's License Required. Activity Hazard Analysis Review for each worker.	- Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order.
Dump Truck	Valid Driver's License Required. Activity Hazard Analysis Review for each worker.	- Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order.
Chain Saw	Field workers are trained on the proper usage of a Chain Saw. Activity Hazard Analysis Review for each worker.	- Inspect daily for proper function, broken parts, loose components etc. Any equipment is found defective will be tagged, taken out of service and replaced immediately.
Personal Protective Equipment (PPE)	All workers will be trained in the proper donning and use of PPE before beginning work. A MINIMUM of 2 individuals trained in CPR/First Aid will be on-site and available to render aid at all times.	- Inspect ALL PPE prior to each use. Any damaged PPE will be replaced immediately. - First Aid Kits will be inspected monthly for damage and/or missing items which shall be replaced immediately.
First Aid Kits		

Competent Person

Signature

Activity/Work Task: SITE PREPERATION
Contract Name: OAZ
Contract Number: W912P918D0014

Competent Persons

Name: Signature: Date:

Meeting Attendees

Name: Signature: Date:

ARDL Drug and Alcohol Policy – Effective January 1, 2019

Introduction

In compliance with the Drug-Free Workplace Act of 1988, ARDL has a longstanding commitment to providing a safe, quality-oriented, and productive work environment consistent with the standards of the community in which we operate. Alcohol and drug abuse pose a threat to the health and safety of ARDL employees and to the security of our equipment and facilities. For these reasons, ARDL is committed to the elimination of drug and/or alcohol use and abuse in the workplace.

This policy outlines the practice and procedure designed to correct instances of identified alcohol and/or drug use in the workplace. This policy continues to apply to all employees and all applicants for employment of ARDL. The Human Resources Department is responsible for policy administration.

Employee Assistance and Drug-Free Awareness

Illegal drug use and alcohol misuse have a number of adverse health and safety consequences. Information about those consequences and sources of help for drug/alcohol problems is available from the Human Resources Department who has been trained to make referrals and assist employees with drug/alcohol problems.

ARDL will assist and support employees who voluntarily seek help for such problems before becoming subject to discipline and/or termination under this or other ARDL policies. Such employees will be allowed to use accrued paid time off, placed on leaves of absence, referred to treatment providers, and otherwise accommodated as required by law. Such employees may be required to document that they are successfully following prescribed treatment and to take and pass follow-up tests if they hold jobs that are safety-sensitive or require driving, or they have violated this policy previously. Once a drug test has been scheduled, the employee will have forfeited their right to be granted a leave of absence for treatment; and possible discipline, up to and including discharge, will be unavoidable.

Employees should report to work fit for duty and free of any adverse effects of illegal drugs or alcohol. This policy does not prohibit employees from the lawful use and possession of prescribed medications. Employees must, however, consult with their doctors about the medications' effect on their fitness for duty, ability to work safely, and promptly disclose any work restrictions to their supervisor. Employees should not, however, disclose underlying medical conditions unless directed to do so.

Work Rules

Whenever employees are; working, operating any ARDL vehicle, present on ARDL premises, or conducting Company related work off-site, they are prohibited from:

1. Using, possessing, buying, selling, manufacturing, or dispensing an illegal drug (to include possession of drug paraphernalia); being under the influence of alcohol or an illegal drug as defined in this policy; and possessing or consuming alcohol.
2. The presence of any detectable amount of any illegal drug or illegal controlled substance in an employee's body system, while performing company business or while in a company facility, is prohibited.
3. ARDL will not allow any employee to perform their duties while taking prescribed drugs that are adversely affecting the employee's ability to safely and effectively perform their job duties. Employees taking a prescribed medication must carry it in the container labeled by a licensed pharmacist or be prepared to produce this if asked.
4. Any illegal drugs or drug paraphernalia will be turned over to an appropriate law enforcement agency and may result in criminal prosecution.

Required Testing

Pre-employment: All applicants must pass a drug test before beginning work or receiving an offer of employment. Refusal to submit to testing will result in disqualification of further employment consideration.

Reasonable Suspicion: Employees are subject to testing based upon (but not limited to) observation, by supervision, of apparent workplace use, possession, or impairment. Human Resources, or the Director of Operations shall be consulted before sending an employee for testing. All levels of supervision making this decision must utilize the “Reasonable Suspicion Incident Checklist” to document specific observations and behaviors that create a reasonable suspicion that the person is under the influence of illegal drugs and/or alcohol. If the results of the “Reasonable Suspicion Incident Checklist” indicate further action is justified, the manager/supervisor, along with another member of management, should confront the employee with the documentation. *Under no circumstances will the employee be allowed to drive himself or herself to the testing facility. A member of supervision/management must escort the employee; the supervisor/manager will make arrangements for the employee to be transported home.*

Post-accident: Employees are subject to testing when they cause or contribute to accidents that seriously damage an ARDL vehicle, machinery, equipment, or property and/or result in an injury to themselves or another employee requiring off-site medical attention. A probable belief circumstance will be presumed to arise in any instance involving a work-related accident or injury in which an employee who was operating a motorized vehicle (including, but not limited to, company vehicle, fork truck, ARDL pickup truck, overhead cranes, aerial/man-lifts) is found to be responsible for causing the accident. In any of these instances, the investigation and subsequent testing must take place within two (2) hours following the accident, if not sooner. *Under no circumstances will the employee be allowed to drive himself or herself to the testing facility.*

Follow-up: Employees who have tested positive, or otherwise violated this policy, are subject to discipline, up to and including discharge. Depending upon the circumstances and the employee’s work history/record, ARDL may offer an employee who violates this policy or tests positive the opportunity to return to work on a last chance basis pursuant to mutually agreeable terms, which could include: follow-up drug testing at times and frequencies determined by ARDL for a minimum of one (1) year but not more than two (2) years; as well as a waiver of the right to contest any termination resulting from a subsequent positive test. If the employee either does not complete their rehabilitation program or tests positive after completing the rehabilitation program, they will be subject to immediate discharge from employment.

Collection and Testing Procedures

Employees subject to alcohol testing shall be driven to an ARDL designated facility and directed to provide breath specimens. Breath specimens shall be tested by trained technicians using federally approved breath alcohol testing devices capable of producing printed results that identify the employee. If an employee’s breath alcohol concentration is .04 or more, a second breath specimen shall be tested approximately 20 minutes later. The results of the second test shall be determinative. Alcohol tests may, however, be a breath, blood, or saliva test, at the Company’s discretion. For purposes of this Policy, test results generated by law enforcement or medical providers may be considered by the Company as work rule violations.

Applicants and employees subject to drug testing shall be driven to an ARDL designated medical facility and directed to provide urine specimens. Applicants and employees may provide specimens in private unless they appear to be submitting altered, adulterated, or substitute specimens. Collected specimens shall be sent to a federally certified laboratory and tested for evidence of marijuana, cocaine, opiates, amphetamines, PCP, benzodiazepines, methadone, methaqualone, and propoxyphane use. (Where indicated, specimens may be tested for other illegal drugs.) The laboratory shall screen all specimens and confirm all positive screens. There shall be a chain of custody from the time specimens are collected through testing and storage.

The laboratory shall transmit all positive drug test results to a Medical Review Officer (“MRO”) retained by ARDL, who shall offer persons with positive results a reasonable opportunity to rebut or explain the results. Persons with positive test results may also ask the MRO to have their split specimen sent to another federally certified laboratory to be tested at the applicant’s or employee’s expense. Such requests must be made within 72 hours of notice of test results. If the second facility fails to find any evidence of drug use in the split specimen, the employee or applicant will be treated as passing the test. In no event shall a positive test result be communicated to ARDL until such time that the MRO has confirmed the test to be positive.

Consequences

Applicants who refuse to cooperate in a drug test or who test positive will not be hired and will not be allowed to re-apply/re-test in the future.

Employees who refuse to cooperate in required tests or who use, possess, buy, sell, manufacture, or dispense an illegal drug in violation of this policy will be terminated.

If the employee refuses to be tested, yet we believe they are impaired, under no circumstances will the employee be allowed to drive himself or herself home.

The first time an employee tests positive for alcohol or illegal drug use under this policy the result will be discipline up to and including discharge.

Employees will be paid for time spent in alcohol/drug testing and then suspended pending the results of the drug/alcohol test. After the results of the test are received, a date/time will be scheduled to discuss the results of the test; this meeting will include a member of management/supervision, and Human Resources. Should the results prove to be negative, the employee will receive backpay for the times/days of suspension.

Confidentiality

Information and records relating to positive test results, drug and alcohol dependencies, and legitimate medical explanations provided to the MRO shall be kept confidential to the extent required by law and maintained in secure files separate from normal personnel files. Such records and information may be disclosed among managers and supervisors on a need-to-know basis and may also be disclosed where relevant to a grievance, charge, claim, or other legal proceeding initiated by or on behalf of an employee or applicant.

Inspections

ARDL reserves the right to inspect all portions of its premises for drugs, alcohol, or other contraband. All employees, contract employees, and visitors may be asked to cooperate in inspections of their persons, work areas, and property that might conceal a drug, alcohol, or other contraband. Employees who possess such contraband or refuse to cooperate in such inspections are subject to appropriate discipline, up to and including discharge.

Crimes Involving Drugs

ARDL prohibits all employees, including employees performing work under government contracts, from manufacturing, distributing, dispensing, possessing, or using an illegal drug in or on ARDL premises or while conducting company business. ARDL employees are also prohibited from misusing legally prescribed or OTC drugs. Law enforcement personnel shall be notified, as appropriate, where criminal activity is suspected.

ARDL does not desire to intrude into the private lives of its employees, but recognizes that employee’s off-the-job involvement with drugs and alcohol may have an impact on the workplace.

Therefore, ARDL reserves the right to take appropriate disciplinary action for drug usage/sale/distribution while off company premises. All employees who are convicted of, plead guilty to, or are sentenced for a crime involving an illegal drug are required to report the conviction, plea, or sentence to Human Resources within five days. Failure to comply will result in automatic discharge. Cooperation in complying may result in suspension without pay to allow management to review the nature of the charges and the employee's past record with ARDL.

Definitions

"Company Premises" includes, but is not limited to: all buildings, offices, facilities, grounds, parking lots, lockers, places and vehicles owned, leased, or managed, by ARDL; or on any site on which the Company is conducting business.

"Illegal Drug" means a substance whose use or possession is controlled by federal law but that is not being used or possessed under the supervision of a licensed health care professional. (Controlled substances are listed in Schedules I-V of 21 C.F.R. Part 1308.)

"Refuse to Cooperate" means to obstruct the collection or testing process; to submit an altered, adulterated, or substitute sample; to fail to show up for a scheduled test; to refuse to complete the requested drug testing forms; or fail to promptly provide specimen(s) for testing when directed to do so, without a valid medical basis for the failure. Employees who leave the scene of an accident without justifiable explanation prior to submission to drug and alcohol testing will also be considered to have refused to cooperate and will automatically be subject to discharge.

"Under the Influence of Alcohol" means an alcohol concentration equal to or greater than .04, or actions, appearance, speech, or bodily odors that reasonably cause a supervisor to conclude that an employee is impaired because of alcohol use.

"Under the Influence of Drugs" means a confirmed positive test result for illegal drug use per this policy. In addition, it means the misuse of legal drugs (prescription and possibly over-the-counter) where there is not a valid prescription from a physician for the lawful use of a drug in the course of medical treatment (containers must include the patient's name, the name of the substance, quantity/amount to be taken, and the period of authorization).

Reasonable Suspicion and Post-Accident Testing Protocol

1. The employee will be advised that ARDL believes that there is reasonable suspicion to believe that he/she is affected by illegal drugs or alcohol (or due to the nature of the accident the policy mandates this) and that this test is being offered to confirm or deny this suspicion.
2. The employee will be transported to any one of the company's contracted testing facilities. One member of management/designated attendant will accompany the employee. *Under no circumstances will the employee be allowed to drive himself or herself to the testing facility.*
3. Prior to leaving for the testing facility, supervision/management will contact the testing facility to inform them that staff from ARDL will be arriving and will need a drug and/or alcohol test completed.
4. Provide water for the employee to drink prior to leaving the workplace and reasonable time - not to exceed 15 minutes - to secure photo ID in the company of a ARDL representative.
5. The employee to be tested **MUST** present a PHOTO ID (i.e., a driver's license or state ID card) to the testing facility staff before the specimen can be obtained. Ensure that the employee brings this with them when leaving ARDL premises.
6. The employee to be tested must sign a consent form provided by/at the testing facility. Refusal to sign is addressed under the "Consequences" section of this document.
7. An ARDL representative must sign as a witness to the collection procedure, along with the tested employee.
8. After returning to the workplace or when leaving the testing facility, the supervisor/manager **MUST** make arrangements to transport the person home (unless testing results are immediate). *Under no circumstances will the tested employee be allowed to drive himself or herself home.*

DRUG AND ALCOHOL POLICY CERTIFICATE OF RECEIPT

I hereby certify that I have received a copy of this latest version of the ARDL Drug and Alcohol Policy,
dated _____.

Signature

Date

Heat/Cold Stress Management Program

Prepared by:



**400 Aviation Drive
Mt. Vernon, IL 62864**

INTRODUCTION

The purpose of this program is to establish procedures in the event of heat/cold stress while working at ARDL, Inc. (ARDL). This plan applies to all ARDL facilities, both home and field offices. ARDL will comply with all applicable federal and state health and safety rules and provide a safe, healthful environment for all our employees. To ensure that information about the dangers of heat/cold stress is known by all affected employees, the following program has been established.

Workplace Safety and Health Regulation Requirements

General Workplace Requirements Regulation, Part 4, addresses thermal stress as follows:

- 4.12 When a workplace or work process exposes a worker to conditions that may create a risk to the worker's safety or health because of heat or cold, an employer must implement safe work procedures and control measures to ensure that:
- a) the threshold limit values for thermal stress established by ACGIH in its publication, Threshold Limit Value for Chemical Substances and Physical Agents and Biological Indices, are followed; and
 - b) the worker is provided with information, instruction, and training in the symptoms of thermal stress and the precautions to be taken to avoid injury from thermal stress.

Workplace Program for Hot or Cold Conditions

ARDL is committed to preventing accidents and ensuring the safety and health of our employees. A workplace or work site with potential heat or cold-related concerns will have a program in place to address these situations. The program will include procedures for: monitoring workers; educating workers; and providing first aid to affected workers.

Prevention is the key. Many factors that contribute to heat or cold-related illnesses or injuries can be controlled to reduce the potential for harm.

Training

ARDL will make sure workers exposed to safety or health risks because of hot or cold conditions at the workplace are provided with information, instruction, and training on recognizing and avoiding injury or illness from thermal stress.

Provide Effective Supervision

ARDL will ensure that all supervisors are informed about: heat and cold related illnesses; symptoms; prevention; and treatment. Supervisors will be informed about recognizing unsafe conditions and how to take corrective action immediately

Promote Internal Responsibility

ARDL will involve managers, supervisors, and workers in identifying heat and cold stress symptoms, and taking required action immediately.

HOT ENVIRONMENTS

Hot Environments and the Human Body

The human body functions best within a narrow internal temperature range of 36°C to 38°C. Below this range, the body's temperature control center in the brain goes to work, directing more blood to vital internal organs and causing shivering to help keep the body warm. In hot environments, more blood is directed toward the skin surface and perspiration increases to help cool the body. When heat loss or gain becomes more than the body can balance, internal systems will begin to fail and shut down, leading to illness and possibly death.

Definitions (for the purpose of this document, the following definitions apply):

Acclimatization - is a gradual process in which the body becomes accustomed to temperature extremes.

Conduction - the transfer of heat to the body by direct contact with a warm object. This is a relatively insignificant source of heat when considering heat gain in the body.

Convection - the exchange of body heat with the surrounding air. If the moving air is cooler than the body temperature, it will cool the body; if warmer, it will increase the heat load. Air speed is an important factor in heat loss or gain.

Evaporation - evaporation of perspiration from the skin is usually the main method of heat removal from the body. As temperature, humidity and rate-of work go up, so does the rate of perspiration. At very high humidity, sweat does not evaporate as quickly, however, high air speed and low humidity increases evaporation. If it is very hot and dry, excessive perspiration may lead to dehydration (excessive fluid loss from the body).

Heat Stress - The heat load a worker may be exposed to from a combination of metabolic heat while working, environmental factors (ex: air temperature, humidity, air movement, and radiant heat exchange), and clothing requirements. Mild or moderate heat stress may cause discomfort and may negatively affect performance and safety. As the heat stress increases, the risk of heat related health disorders increase.

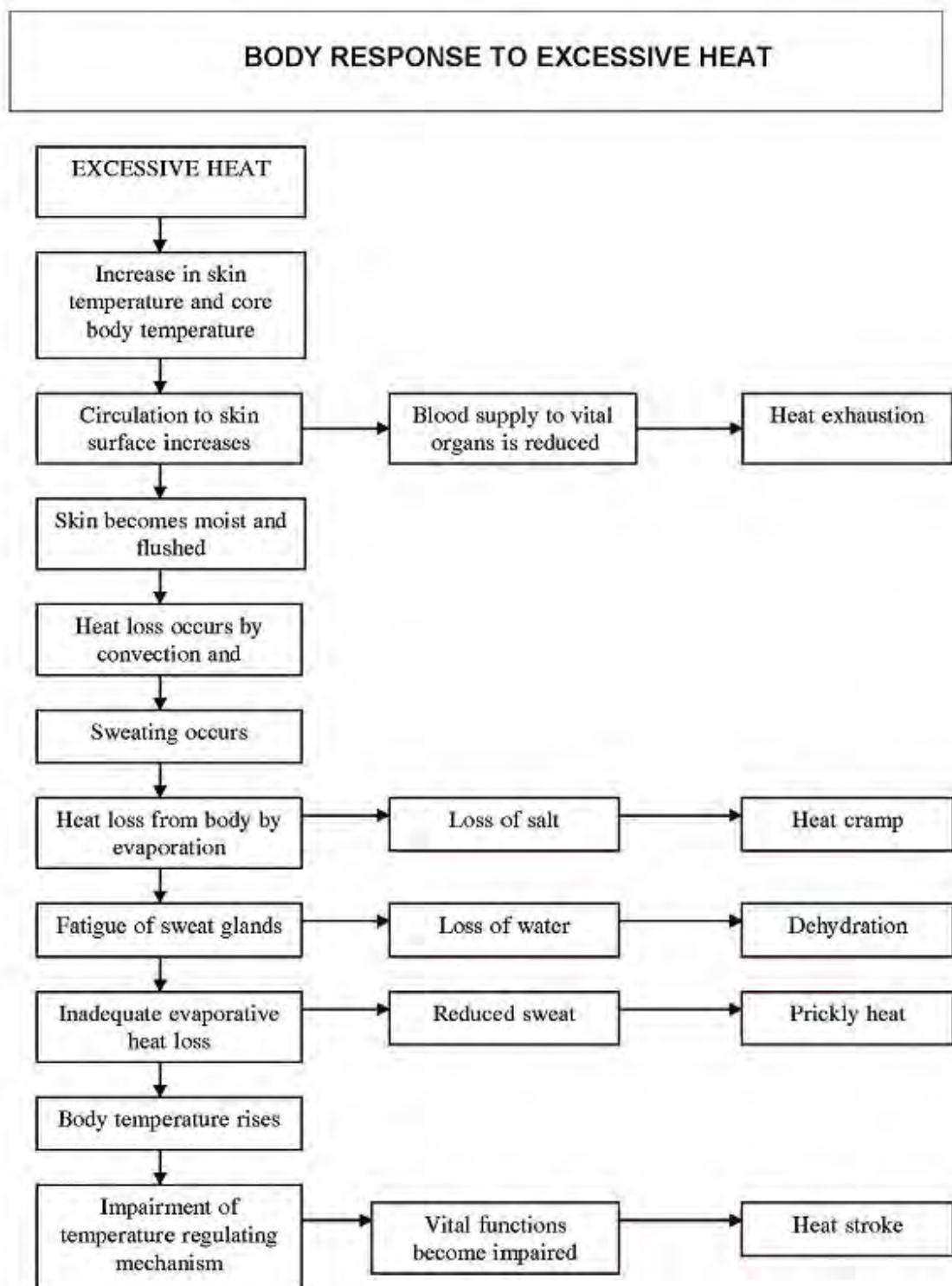
Radiation - the transfer of heat to the body through air, from a hot source, such as a furnace, an oven, or the sun. This is important to note as heat is only lost from the body if the surrounding air is cooler than the body.

The Body's Responses to Heat

Dehydration is a common concern when working in a hot environment. As shown in the illustration on page 3, it is caused by failure to replace the salt and water lost through perspiration. Although perspiring helps the body cool, it is necessary to replace lost fluid and salt.

On average, one to two cups of water per hour are required to replace fluid lost from heavy perspiration. Sugary drinks such as soda pop, and fluids containing caffeine and alcohol should be avoided. Cool, but not cold, water should be provided in a location convenient to workers. Because the feeling of thirst may not be enough to ensure adequate water intake, workers in hot environments should be encouraged to drink at least one cup per hour. Too much water (more than two cups) should not be taken at one time since workers may develop abdominal cramps.

Most people consume enough salt as table salt and as naturally occurring salt in foods. Fruit and vegetable juices can be good sources of natural salt. Encourage workers on salt-restricted diets to discuss salt needs with their doctor. Salt tablets should only be taken on a doctor's advice.



Heat-Related Illnesses

Below is a list of heat-related illnesses in increasing order of severity.

SIGNS & SYMPTOMS	CAUSES	PREVENTION	TREATMENT
HEAT FATIGUE			
<ul style="list-style-type: none"> Irritability, tiredness, loss of skill for fine or precision work. Lower ability to concentrate. No change in body temperature. 	<ul style="list-style-type: none"> Lack of acclimatization. Other emotional or psychological stresses. Discomfort in heat. 	<ul style="list-style-type: none"> Proper acclimatization. Rest breaks. 	<ul style="list-style-type: none"> None necessary unless other heat illness present. Removal may be necessary if acclimatization is ineffective.
HEAT RASH			
<ul style="list-style-type: none"> Prickling sensation during heat exposure. Itchy, tiny red spots on skin covered by clothing. A result of plugged sweat glands. 	<ul style="list-style-type: none"> Skin continuously wet from sweat. Humid heat. 	<ul style="list-style-type: none"> Shower to keep skin clean. Apply powder and mild drying lotions (e.g. calamine). 	<ul style="list-style-type: none"> Keep skin dry. Rest in cool place. May take several days to subside.
HEAT SYNCOPE			
<ul style="list-style-type: none"> Giddiness and fainting while standing in hot environment. 	<ul style="list-style-type: none"> Pooling of blood in legs causing drop in blood pressure. Lack of acclimatization. Loss of body fluid from sweating. 	<ul style="list-style-type: none"> Moving from time to time. Proper acclimatization. Drink extra fluids. 	<ul style="list-style-type: none"> Rest in cool area. Recovery usually fast. May need to see physician.
HEAT CRAMPS			
<ul style="list-style-type: none"> Sharp pains in muscles of arms, legs or abdominal muscles. May occur during or after work. 	<ul style="list-style-type: none"> Heavy sweating causing loss of salt. Drinking large amounts of water without salt replacement. 	<ul style="list-style-type: none"> Add salt to foods. Drink fluids naturally containing salt (e.g. fruit and vegetable juices). 	<ul style="list-style-type: none"> Move to cool place. Give salted fluids. If severe, may need to see physician.
HEAT EXHAUSTION			
<ul style="list-style-type: none"> Headache, nausea, dizziness, weakness, intense thirst. Skin moist and clammy. Rapid, weak pulse. 	<ul style="list-style-type: none"> Loss of water and salt from heavy sweating. Lowered volume of circulating blood. Lack of acclimatization. Sustained exertion in high temperatures. 	<ul style="list-style-type: none"> Drink cool fluids often. Take extra salt in food. Drink fruit juices. Proper acclimatization. 	<ul style="list-style-type: none"> Rest lying down in cool area. Replace body fluids and salt. If vomiting, refer to physician.
HEAT STROKE OR HEAT HYPER-PYREXIA			
<ul style="list-style-type: none"> Nausea, headache, dizziness. Hot dry skin (moist in hyperpyrexia). Body temperature 40°C or over. Rapid strong pulse. Convulsions, coma may occur. 	<ul style="list-style-type: none"> Failure of central control of sweating. Prolonged work in hot environment. Unfit, unacclimatized workers. High humidity. Pre-existing medical conditions, use of medications, high alcohol intake. 	<ul style="list-style-type: none"> Medical assessment prior to hot work. Acclimatization. Monitoring of workers during periods of work in heat. Work-rest regimes. Adequate fluid/salt replacement. 	<ul style="list-style-type: none"> Immediate medical attention! Immediate first aid-remove clothing, spray with cool water, fanning, cool wet sheets.

Factors Contributing to Heat-Related Illnesses

Factors other than the environment and workload can influence the body's ability to acclimatize and cope with heat. To avoid heat related illness, such factors should be taken into consideration when assigning worker tasks and deciding on control measures.

Workers should ask a health professional whether any drugs being taken may increase the risk of heat illnesses. Age generally brings a decrease in efficiency of sweat glands, heart, and lungs (after age 45). Gender is an influencing factor since men tend to have a higher sweat rate and larger oxygen intake, and therefore tend to acclimatize better than women. Fitness, size, and other factors affect the differences in people's ability to acclimatize.

Lack of acclimatization - the body has not had enough time to adjust, or other factors prevent the body from adjusting to the heat

General state of health - the following medical conditions may be a factor in causing heat illness or may be aggravated by heat:

- a) Skin disorders may limit sweating (ex: dermatitis, when aggravated by heat/moisture).
- b) Heart and lung diseases may limit ability to cope with heat and may be aggravated by it.
- c) Diabetes, poorly controlled, may contribute to dehydration and may be aggravated by excessive heat.
- d) Diarrhea may contribute to dehydration.
- e) Obesity requires increased energy to move around and the extra insulation reduces heat loss - both contribute to the body's overall heat gain.

Facts about acclimatization - Physically fit, healthy individuals generally acclimatize more quickly. Acclimatization will last for about one week if away from the heat and will disappear completely in three weeks. Drinking extra fluids hastens the acclimatization process.

Medication/drugs - can affect the body's responses to heat and may affect acclimatization. Different medications/drugs may affect different parts of the body:

- a) the brain's thermostat is affected by ASA, phenothiazines
- b) the sweating function is affected by pilocarpine, and anticholinergic drugs such as hyoscine
- c) the circulatory system is affected by antihypertensives, antiarrhythmics, diuretics, alcohol, street drugs
- d) the metabolic rate is affected by thyroxine, alcohol, street drugs

Acclimatization

This section shows ways to help achieve heat acclimatization. Acclimatization is an important, gradual process in which the body becomes accustomed to temperature extremes. During initial exposures to a hot environment, workers often feel very tired, irritable and too hot. Body temperatures often rise. After repeated exposures, these symptoms decrease or disappear. When this occurs, a person is considered acclimatized. In the same way that many factors may lead to heat illness, there are differences in people that affect the rate at which they acclimatize.

Acclimatization Schedule

As a rule, acclimatization may take from five to seven days for a healthy worker. New workers with no recent heat exposure should be started (on their first day) with 50 percent of a normal workload. This may be increased by 10 percent each day until a full workload is reached. Workers may be assigned to work in cooler areas for portions of the day until fully acclimatized. The added workload will need to be varied if other factors that contribute to heat-related illness are present. Also, adequate fluids must be provided and encouraged for all workers, especially new or returning workers. Workers who have been off the job for a week should be re-acclimatized for two to three days.

Measurement of Occupational Heat Exposure

The Workplace Safety and Health Act or regulations do not specify a maximum temperature above which work must stop. Rather, the combination of environmental conditions must be measured and evaluated against a set of exposure limits recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). These exposure limits or threshold limit values (TLV) are published annually in a booklet titled, Threshold Limit Values and Biological Exposure Indices.

Heat Exposure Limits

The allowable work/rest to prevent heat stress is shown in Table 1 and is adjusted for light, moderate, or heavy work. Recommendations are made for rest breaks when these temperatures are exceeded. See Table 2 for examples of what is meant by these workloads, and for the recommended work-rest schedule when the WBGT temperatures increase.

TABLE 1: Work/Recovery Schedule To Prevent Heat Stress

Allocation of Work in a Cycle of Work and Recovery	WBGT Values in Celsius			
	Light	Moderate	Heavy	Very Heavy
75% to 100%	31.0	28.0	—	—
50% to 75%	31.0	29.0	27.5	—
25% to 50%	32.0	30.0	29.0	28.0
0% to 25%	32.5	31.5	30.5	30.0

TABLE 2: Classification of Rate of Work

Resting	- Sitting quietly, sitting with moderate arm movements
Light	- Sitting with moderate arm and leg movements - Standing with light work at machine or bench, while using mostly arms and/or some walking - Using a table saw
Moderate	- Walking about with moderate pushing or lifting - Walking on level at six kilometers per hour while carrying three kilograms - Scrubbing in a standing position
Heavy	- Carpenter sawing by hand - Intermittent heavy lifting with pushing or pulling (i.e. shovel & pick work) - Shoveling dry sand - Heavy assembly work on a non continuous basis
Very Heavy	- Shoveling wet sand

The values in Table 1 are based on healthy, acclimatized workers wearing one layer of customary work clothing. Water-vapor-impermeable, air-impermeable, thermally insulating clothing, multiple layers of clothing and encapsulating suits severely restrict heat removal. Variations from the customary clothing require modification of the TLV. See Table 3 for suggested modifications.

TABLE 3: Clothing-Adjustment Factors for Some Clothing Ensembles*

Clothing Type	Addition to WBGT (C)
Work clothes (long sleeves shirt and pants)	0
Cloth (woven material) coveralls	0
Double-layer woven clothing	3
SMS polypropylene coveralls	0.5
Polyolefin coveralls	1
Limited use vapor-barrier coveralls	11

* These values must not be used for completely encapsulating suits, often called Level A. Clothing adjustment Factors cannot be added for multiple layers. The coveralls assume that only modest clothing is worn underneath, not a second layer of clothing.

Prevention and Control Measures

The risk of heat-related illnesses can be reduced by preventive and control measures, including:

- a) engineering controls to provide a cooler workplace
- b) administrative controls to reduce exposure and recognize symptoms of heat-related illness
- c) personal protective equipment, when necessary, to further limit exposure

Engineering Controls

Engineering controls are the most effective means of reducing occupational heat exposure, including:

- planning during the workplace construction if a hot environment is anticipated
- shielding the radiant heat at the source through insulation and reflective barriers
- exhausting heat and water-vapor (steam) to the outside
- reducing temperature and humidity through ventilation or air-conditioning
- providing cooled observation booths or air-conditioned rest areas
- increasing general air movement if temperature is less than skin temperature (~36°C)
- reducing air movement if air temperature is greater than skin temperature
- reducing physical exertion by changing processes or using machines designed to assist

Administrative Controls

Administrative controls like these are the easiest to put in place, for or by the worker:

- apply a work schedule to allow for heat acclimatization
- increase frequency and length of rest breaks
- schedule hot jobs during cooler times of day
- provide cool drinking water near the work location and encourage workers to drink even if not feeling thirsty
- slow down work pace or assign additional workers to decrease workload
- allow for self-limitation of exposures and encourage co-workers to observe signs and symptoms of heat stress in each other
- provide workers with accurate written and verbal instructions, frequent training programs and other information on heat stress
- consider requiring that, as a condition of hiring, prospective employees provide medical evidence that they are not susceptible to systemic heat related illness
- use air-conditioned rest areas

Personal Protective Equipment

Where engineering or administrative controls are not feasible or practical, occasional use of personal protective equipment may be necessary, including:

- wear insulated or cooled clothing for short-term exposure such as
- maintenance jobs
- wear clothing that allows free movement of airflow
- wear heat reflective clothing near heat sources such as a hot furnace
- wear light-filtering eye protection when work involves hot objects such as molten metals
- use sunscreen and sun block when working outdoors
- wear a hat and light clothing to protect skin when working in the sun

COLD ENVIRONMENTS

Cold Environments and the Human Body

Cold can be a serious occupational hazard for many workers. Construction, oil and gas extraction, trucking, fire fighting, police work, farming/ranching, fishing, logging and other outdoor jobs are examples of occupations where the potential for serious cold injury exists. Fatal exposures to cold have most commonly resulted from accidental exposures involving immersion in low temperature water and failure to escape from low air temperature environments.

Workers do not need to be exposed to below zero temperatures to experience cold related conditions such as hypothermia. Indoor workers in refrigerated rooms or unheated buildings can also be at risk. Frostbite and hypothermia are two conditions of particular concern.

Cold stress exposure charts can help protect workers from the severest effects of cold stress and cold injury. They describe cold working conditions most workers can handle repeatedly without adverse health effects. They can help workers prevent cold injuries by determining when the risk is too high.

Definitions:

Frostbite - happens when tissue freezes. Any exposed skin is subject to frostbite when temperatures fall below freezing. Frostbite can lead to scarring, permanent tissue damage, possible amputation and disability. Symptoms of frostbite vary according to severity. Mild cases may produce prickling or burning sensations. Severe frostbite can produce extreme pain or none at all if nerve tissues are affected.

Hypothermia - occurs when the core body temperature drops below a level that allows it to maintain normal metabolic function, often only one or two degrees. Initial symptoms include a sensation of cold, followed by pain. As exposure time increases, the sensation of pain is reduced and overall numbness develops. Additional symptoms may include muscle weakness, confusion, slurred speech and drowsiness. Hypothermia can rapidly progress to coma and death.

Wind Chill Cooling Rate - is the heat loss from a body, often expressed in watts per square meter. This rate is a function of air temperature and wind velocity.

Factors that Contribute to the Risk of Cold Injury:

- temperature
- wind speed
- moisture (perspiration or working near water)
- exposure duration
- type of clothing
- work/rest schedule
- type of work performed
- use of certain medications
- degree of acclimatization (previous exposure to the cold)
- age and physical state of the worker

Adequate Insulating Dry Clothing

Workers must wear adequate insulating dry clothing if work is performed in air temperatures below 4°C in order to maintain the core body temperature above 36°C. The cooling power of air and the wind chill cooling rate are critical factors. The lower the air temperature and the higher the wind speed, the greater the insulation value of the protective clothing must be. The combined effect of temperature and wind speed as shown in Table 4 should be used in determining the requirements for warm-work periods.

TABLE 4: The Cooling Power of Wind (°C)

Estimated wind speed (in km/h)	Actual temperature reading (°C)													
	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	
	Equivalent chill temperature (°C)													
Calm	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	
8	9	3	-2	-7	-12	-18	-23	-28	-33	-38	-44	-48	-54	
16	4	-2	-7	-14	-20	-27	-33	-38	-45	-50	-57	-53	-69	
24	2	-5	-11	-18	-25	-32	-38	-45	-52	-58	-65	-72	-78	
32	0	-7	-14	-21	-28	-35	-42	-50	-56	-64	-71	-78	-84	
40	-1	-8	-16	-24	-31	-38	-46	-53	-60	-67	-76	-82	-90	
48	-2	-10	-17	-25	-33	-40	-48	-55	-63	-70	-78	-86	-94	
56	-3	-11	-18	-26	-34	-42	-50	-58	-65	-73	-81	-89	-96	
64	-3	-11	-19	-27	-35	-43	-59	-59	-66	-74	-82	-90	-98	
(Wind speeds greater than 64km/h have little additional effect.)	LITTLE DANGER In < 1 hr with dry skin. Maximum danger of false sense of security.				INCREASING DANGER Danger from freezing of exposed flesh within one minute.			GREAT DANGER Flesh may freeze within 30 seconds						
	Trenchfoot and immersion foot may occur at any point on this chart.													

Equivalent chill temperature requiring dry clothing to maintain core body temperatures above 36°C (96.8°F) per cold stress TLV.

Warm-Up Periods

When continuous work in an equivalent chill temperature (ECT) at or below -7°C is required, heated shelters (cabins, tents, rest rooms, etc.) should be available nearby. These shelters should be used as frequently as required, depending on the severity of the cold conditions. Immediate use of the shelter is required by workers with the onset of heavy shivering, minor frostbite, excessive fatigue, irritability, drowsiness, or euphoria. When entering a heated shelter, the worker should remove the outer layer of clothing and loosen the remainder of the clothing to allow sweat evaporation. Warm, sweet drinks and soups should be provided for caloric intake and fluid volume. The intake of coffee should be limited due to the effects on the renal and circulatory system.

When working in conditions at or below -12°C ECT, the following measures should be in place:

1. a buddy system or supervision of workers
2. limit the amount of heavy work (to avoid heavy perspiration)
3. provide workers with required protective clothing and allow workers to
4. become accustomed to the cold working conditions
5. all work performance (including weights to be lifted by the worker) should
6. take into consideration the bulkiness and weight of workers' clothing
7. encourage continuous body movement (minimize sitting or standing still) in cold environments, and protect workers from drafts

Training for workers should include, at a minimum:

- proper clothing practices
- proper eating and drinking habits
- proper re-warming procedures and first aid
- signs and symptoms of impending frostbite
- signs and symptoms of impending hypothermia
- safe work practices

Workplace Monitoring

1. Suitable thermometers should be available where the air temperature is below 16°C.
2. When the air temperature falls below -1°C, a dry bulb temperature should be measured and recorded every four hours.
3. Indoor environments: wind speed should be recorded every four hours, whenever air movement exceeds two meters per second.
4. Outdoor work: wind speed should be measured and recorded whenever the air temperature is below -1°C.
5. Equivalent wind chill should be obtained when air movement measurements are required and recorded whenever equivalent chill temperature is below -7°C (see Table 4).

The following table should be used to determine the ratio of warm up to work periods.

TABLE 5: Work/Warm-up Schedule for Four Hour Shifts and Moderate to Heavy Work Activity*

Air Temperature °C (Sunny Skies)	No Noticeable Wind		8 km/h Wind		16 km/h Wind		24 km/h Wind		32 km/h Wind	
	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26 to -28	Normal	1	Normal	1	75 mins.	2	55 mins.	3	40 mins.	4
-29 to -31	Normal	1	75 mins.	2	55 mins.	3	40 mins.	4	30 mins.	5
-32 to -34	75 mins.	2	55 mins.	3	40 mins.	4	30 mins.	5		
-35 to -37	55 mins.	3	40 mins.	4	30 mins.	5				
-38 to -39	40 mins.	4	30 mins.	5						
-40 to -42	30 mins.	5								
-43 and below										

In all shaded areas non-emergency work should cease

This schedule applies to moderate-to-heavy work with breaks of 10 minutes in a warm location to allow workers to warm up. For light-to-moderate work (little physical movement), apply the schedule one step lower. For example at -35°C with no noticeable wind, a worker at a job with little physical movement should have a maximum work period of 40 minutes with 4 breaks in a 4-hour shift instead of 55 minute work periods and 3 breaks.

* Adapted from Occupational Health & Safety, Saskatchewan Department of Labor

Older Workers or Workers with Circulation Problems

Older workers or workers with circulation problems require special precautionary protection against cold injury, including the use of extra insulating clothing and/or reduced exposure time. Precautionary actions should be determined with the advice of a physician.

Evaluation and Control

1. Continuous skin exposure should not be permitted when air speed and temperature results in an equivalent chill temperature of -32°C. Deep tissue freezing will occur only at temperatures below -1°C, regardless of wind speed.
2. At air temperatures of 2°C or less, workers who become immersed in water, or whose clothing becomes wet, must be provided a change of dry clothing and be treated for hypothermia.

Crystalline Silica Exposure Control Plan

Prepared by:



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1. POLICY STATEMENT

ARDL Inc. (ARDL) is committed to providing a safe and healthful work environment for all employees. In pursuit of this goal, the following Crystalline Silica Exposure Control Plan (CSECP) is provided to control occupational exposure to respirable crystalline silica in accordance with the Final Rule, provisions of which are found in OSHA Regulations Sec. 1926.1153(k) "Occupational Exposure to Respirable Crystalline Silica" effective 23 September 2017.

Silica is the second most common mineral on earth and makes up nearly all of what we call "sand" and "rock." One of the many forms of silica, "crystalline" silica (including quartz), is the most abundant and poses the greatest concern for human health. Some common materials that contain silica include:

- Rock and sand
- Topsoil and fill
- Concrete, cement, and mortar
- Masonry, brick, and tile
- Granite, sandstone, and slate
- Asphalt (containing rock and stone)
- Fibrous-cement board containing silica

Silica is a primary component of many common construction materials, and silica-containing dust can be generated during many construction activities, including:

- Abrasive blasting (e.g., of concrete structures)
- Jackhammering, chipping, or drilling rock or concrete
- Cutting brick or tiles
- Sawing or grinding concrete
- Tuck point grinding
- Road construction
- Loading, hauling, and dumping gravel
- Demolition of structures containing concrete
- Sweeping concrete dust

Unprotected workers performing these activities, or working in the vicinity, can be exposed to harmful levels of airborne silica.

2. HEALTH EFFECTS

Exposure to silica has been shown to cause lung cancer, pulmonary tuberculosis, and other airway diseases. Crystalline silica dust can cause a disabling, sometimes fatal disease called silicosis. The fine particles are deposited in the lungs, causing thickening and scarring of the lung tissue. The scar tissue restricts the lungs' ability to extract oxygen from the air. This damage is permanent, but symptoms of the disease may not appear for many years.

A worker may develop any of three types of silicosis, depending on the concentrations of silica dust and the duration of exposure:

- **Chronic silicosis** - develops after 10 or more years of exposure to crystalline silica at relatively low concentrations
- **Accelerated silicosis** - develops 5 to 10 years after initial exposure to crystalline silica at high concentrations
- **Acute silicosis** - develops within a few weeks, or 4 to 5 years, after exposure to very high concentrations of crystalline silica

Initially, workers with silicosis may have no symptoms; however, as the disease progresses, a worker may experience:

- Shortness of breath
- Severe cough
- Weakness

These symptoms can worsen over time and lead to death. Exposure to silica has also been linked to other diseases, including bronchitis, tuberculosis, and lung cancer.

3. PURPOSE

This CSECP was developed by ARDL to prevent or minimize employee exposure to hazardous levels of Respirable Crystalline Silica that could result through construction activities or construction activities occurring on nearby worksites. The purpose of this program is to address and control these potential exposures to prevent employees from experiencing the effects of occupational illnesses related to Respirable Crystalline Silica exposure.

4. SCOPE

This CSECP applies to all employees who have the potential to be exposed to Respirable Crystalline Silica when covered by the OSHA Standard. The OSHA Respirable Crystalline Silica Construction Standard applies to all occupational exposures to Respirable Crystalline Silica in construction work, except where employee exposure will remain below 25 micrograms of Respirable Crystalline Silica per cubic meter of air (25 µg/m³) as an 8-hour time-weighted average (TWA) under foreseeable conditions.

5. DEFINITIONS

Action Level - concentration level of airborne Respirable Crystalline Silica equal to 25 µg/m³, calculated as an 8-hour TWA.

Competent Person - an individual who is capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them. The competent person must have the knowledge and ability necessary to fulfill the responsibilities set forth in this policy.

Employee Exposure - the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

High-Efficiency Particulate Air [HEPA] Filter - a filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter.

Objective Data - information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to Respirable Crystalline Silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Permissible Exposure Limit (PEL) - means the employer shall ensure that no employee is exposed to an airborne concentration of Respirable Crystalline Silica in excess of 50 µg/m³, calculated as an 8-hour TWA.

Physician or other Licensed Health Care Professional [PLHCP] - an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the particular health care services required by this policy.

Respirable Crystalline Silica - quartz, cristobalite, and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality - Particle Size Fraction Definitions for Health- Related Sampling.

Site Safety and Health Officer [SSHO] - individual meeting minimum safety training standards that is assigned and granted authority to represent the company in all matters of site safety on the project.

6. RESPONSIBILITIES

ARDL firmly believes protecting the health and safety of our employees is everyone's responsibility. This responsibility begins with upper management providing the necessary support to properly implement this program. However, all levels of the organization assume some level of responsibility for this program, including the following positions:

The Program Administrator: ARDL SSHO

Responsibilities include:

- Issuing and administering this program, when necessary, and making sure that it satisfies all applicable federal, state, and local requirements.
- Ensuring that employees have this plan available to them.
- Conducting a periodic review of the effectiveness of the CSECP.
- A review of the available dust-control technologies to ensure these are selected and used when practical.
- Initiating sampling of worker exposure to concrete dust when there are non- standard work practices for which the control methods to be used have not been proven to be adequately protective.
- The CSECP must be evaluated at least once per year and as necessary. Situations where reevaluation may be necessary include regulatory updates, changes in equipment, and exposure incidents.
- Any changes to this plan must be communicated to affected employees.
- Maintain records of training, fit-test results, crew talks, and inspections (equipment, Personal Protective Equipment (PPE), work methods/practices).

ARDL Project Manager (PM)

Responsibilities include:

- When applicable, substitution of less hazardous products for those that contain crystalline silica. (i.e. a PM sourcing grout mix that has less silica content).
- Ensuring that the materials (e.g., tools, equipment, PPE) and other resources (i.e. worker training materials) required to fully implement and maintain this plan are readily available where and when they are required.
- Provide, in detail, the work methods and practices that are required. Considerations will include:
 - Availability and delivery of all required tools/equipment
 - Scope and nature of silica dust generation work to be conducted
 - Control methods to be used and level of respiratory protection, if any, required
 - Ensuring supervisors and workers are educated and trained to a competent level
 - Coordinate work with the all subcontractors to ensure a safe work environment
 - Selecting and implementing the appropriate site-specific control measures
 - Providing adequate instruction to workers on the hazards of working with silica-containing materials and hazards at the location
 - Ensuring that, when required, workers are using the proper respirators and have passed a documented fit-test for that respirator
 - Directing the work in a manner that ensures the risk to workers is eliminated, or minimized and adequately controlled

Employees

Responsibilities include:

- Knowing the hazards of silica dust exposure
- When required, using the assigned personal PPE in an effective and safe manner
- Ensure you are trained on any equipment used
- Following established work procedures as directed by the SSHO and PM
- Reporting any unsafe conditions or acts
- Knowing how and when to report exposure incidents

7. CONTROL METHODS

7.1 Specified Exposure Control Methods

When possible and applicable, ARDL will conduct activities with potential Silica exposure to be consistent with **OSHA's Construction Standard Table 1** (Appendix A). The ARDL SSHO will ensure each employee engaged in a task identified in Appendix A have fully and properly implemented the engineering controls, work practices, and respiratory protection specified for the task (unless ARDL has assessed and limited the exposure of the employee to Respirable Crystalline Silica in accordance with the Alternative Exposure Control Methods Section of this program).

When implementing the control measures specified Appendix A, in which exposure cannot be eliminated or minimize through other means, ARDL shall:

- For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;
- For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;
- For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:
 - Is maintained as free as practicable from settled dust;
 - Has door seals and closing mechanisms that work properly;
 - Has gaskets and seals that are in good condition and working properly;
 - Has heating and cooling capabilities.
- Where an employee performs more than one task included in Appendix A during the course of a shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Table 1 combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.

7.2 Alternative Exposure Control Methods

Alternative Exposure Control Methods apply for tasks not listed in Appendix A, or where ARDL cannot not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1.

First, ARDL will assess the exposure of each employee who is, or is expected to be, exposed to Respirable Crystalline Silica at or above the Action Level in accordance with either the Performance Option or the Scheduled Monitoring Option.

Performance Option - ARDL will assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to Respirable Crystalline Silica.

Scheduled Monitoring Option:

- ARDL will perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees in each work area. Where several employees perform the same tasks in the same work area, ARDL will plan to monitor a representative fraction of these employees. When using representative monitoring, ARDL will sample the employee(s) who are expected to have the highest exposure to Respirable Crystalline Silica.
- If initial monitoring indicates that employee exposures are below the Action Level, ARDL will discontinue monitoring.
- Where the most recent exposure monitoring indicates that employee exposures are at or above the Action Level but at or below the PEL, ARDL will discontinue monitoring, but repeat monitoring within six months.
- Where the most recent exposure monitoring indicates that employee exposures are above the PEL, ARDL will repeat such monitoring within one month of the most recent monitoring.
- Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the Action Level, ARDL will repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken seven or more days apart, are below the Action Level. At which time, ARDL will discontinue monitoring, except when a reassessment is required.
- ARDL will reassess exposures whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the Action Level, or when ARDL has any reason to believe that new or additional exposures at or above the Action Level have occurred.

ARDL will ensure that all Respirable Crystalline Silica samples taken to satisfy the monitoring requirements of this program are collected by a qualified individual and evaluated by a qualified laboratory (i.e. accredited to ANS/ISO/IEC Standard 17025:2005 with respect to Crystalline Silica analyses by a body that is compliant with ISO/IEC Standard 17011:2004 for implementation of quality assessment programs).

Within five working days after completing an exposure assessment, ARDL will notify affected employees of the results of that assessment.

Once air monitoring has been performed, ARDL will determine its method of compliance based on the monitoring data and the hierarchy of controls. ARDL will use engineering and work practice controls to eliminate, reduce, and/or maintain employee exposure to Respirable Crystalline Silica to or below the PEL, unless ARDL can demonstrate that such controls are not feasible. Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, these controls will still be used to reduce employee exposure to the lowest feasible level and shall supplement them with the use of respiratory protection.

In addition to the requirements of this program, ARDL will comply with other programs and OSHA standards (such as 29 CFR 1926.57 [Ventilation]), when applicable where abrasive blasting is conducted using Crystalline Silica-containing blasting agents, or where abrasive blasting is conducted on substrates that contain Crystalline Silica.

8. RESPIRATORY PROTECTION

Where respiratory protection is required by this program, ARDL will ensure each employee has access to an appropriate respirator that complies with the requirements of the OSHA Respiratory Protection Standard (29 CFR 1910.134).

Respiratory protection is required where specified by the OSHA Construction Standard Table 1, for tasks not listed in Table 1, or where the company has not fully and properly implemented the engineering controls, work practices, and respiratory protection described in Table 1. Situations requiring respiratory protection include:

- Where exposures exceed the PEL during installation or implementation of feasible engineering and work practice controls;
- Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible; and
- During tasks for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL.

When respirators are used, ARDL will implement a comprehensive **Respiratory Protection Program**. Important elements of this program are:

- Periodic environmental monitoring.
- Training of personnel.
- Selection of proper NIOSH approved respirators.
- An evaluation of the worker's ability to perform the work while wearing a respirator.
- Respirator fit testing.
- Maintenance, inspection, cleaning, and storage of respiratory protection equipment.

9. HOUSEKEEPING

ARDL does not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to Respirable Crystalline Silica unless wet sweeping, HEPA-filtered vacuuming, or other methods that minimize the likelihood of exposure are not feasible.

ARDL does not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to Respirable Crystalline Silica unless:

- The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or
- No alternative method is feasible.

10. MEDICAL SURVEILLANCE

Medical surveillance will be made available for each employee who will be required to use a respirator for 30 or more days per year due to their Respirable Crystalline Silica exposure. Medical surveillance (i.e. medical examinations and procedures) will be performed by a PLHCP and provided at no cost to the employee at a reasonable time and place.

Additional medical examination may be available after initial assignment, unless the employee has received a medical examination that meets the requirements of the OSHA Respirable Crystalline Silica Construction Standard within the last three years.

The examination may consist of:

- A medical and work history, with emphasis on past, present, and anticipated exposure to Respirable Crystalline Silica, dust, and other agents affecting the respiratory system in addition to any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing), history of tuberculosis, and smoking status and history;
- A physical examination with special emphasis on the respiratory system;
- A chest X-ray (a single postero-anterior radiographic projection or radiograph of the chest at full inspiration recorded on either film [no less than 14 x 17 inches and no more than 16 x 17 inches] or digital radiography systems) interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader;
- A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course;
- Testing for latent tuberculosis infection; and
- Any other tests deemed appropriate by the PLHCP.

ARDL will make available medical examinations that include the aforementioned procedures (except testing for latent tuberculosis infection) at least every three years. If recommended by the PLHCP, periodic examinations can be more frequently than every three years.

ARDL will ensure that the examining PLHCP has a copy of the OSHA Respirable Crystalline Silica Construction Standard, this program, and the following information:

- A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to Respirable Crystalline Silica;
- The employee's former, current, and anticipated levels of occupational exposure to Respirable Crystalline Silica;
- A description of any PPE used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and
- Information from records of employment-related medical examinations previously provided to the employee and currently within the control of ARDL.

ARDL will ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed. The written report shall contain:

- A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to Respirable Crystalline Silica and any medical conditions that require further evaluation or treatment;
- Any recommended limitations on the employee's use of respirators;
- Any recommended limitations on the employee's exposure to Respirable Crystalline Silica; and;
- A statement that the employee should be examined by a Specialist if the chest X-ray is classified as 1/0 or higher by the B Reader, or if referral to a Specialist is otherwise deemed appropriate by the PLHCP.

ARDL will also obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following in order to protect the employee's privacy:

- The date of the examination;
- A statement that the examination has met the requirements of the OSHA Respirable Crystalline Silica Construction Standard; and
- Any recommended limitations on the employee's use of respirators.

If the employee provides written authorization, the written opinion shall also contain either or both of the following:

- Any recommended limitations on the employee's exposure to Respirable Crystalline Silica; and/or
- A statement that the employee should be examined by a Specialist if the chest
- X-ray is classified as 1/0 or higher by the B Reader, or if referral to a Specialist is otherwise deemed appropriate by the PLHCP.

If the PLHCP's written medical opinion indicates that an employee should be examined by a Specialist, ARDL will make available a medical examination by a Specialist within 30 days after receiving the PLHCP's written opinion. ARDL will ensure that the examining Specialist is provided with all of the information that the employer is obligated to provide to the PLHCP.

ARDL will ensure that the Specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination. The written report will contain:

- A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to Respirable Crystalline Silica and any medical conditions that require further evaluation or treatment;
- Any recommended limitations on the employee's use of respirators; and
- Any recommended limitations on the employee's exposure to respirable crystalline Silica.

In addition, ARDL will obtain a written opinion from the Specialist within 30 days of the medical examination. The written opinion shall contain the following:

- The date of the examination;
- Any recommended limitations on the employee's use of respirators; and
- If the employee provides written authorization, the written opinion shall also contain any recommended limitations on the employee's exposure to Respirable Crystalline Silica.

11. HAZARD COMMUNICATION

ARDL will include Respirable Crystalline Silica in the company's Hazard Communication Program established to comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200).

ARDL will ensure that each employee has access to labels on containers of Crystalline Silica and those containers respective Safety Data Sheets (SDSs).

All employees will be trained in accordance with the provisions of the OSHA Hazard Communication Standard and the Training Section of this program. This training will cover concerns relating to cancer, lung effects, immune system effects, and kidney effects.

ARDL will ensure that each employee with the potential to be exposed at or above the Action Level for Respirable Crystalline Silica can demonstrate knowledge and understanding of at least the following:

- The health hazards associated with exposure to Respirable Crystalline Silica;
- Specific tasks in the workplace that could result in exposure to Respirable Crystalline Silica;
- Specific measures ARDL has implemented to protect employees from exposure to Respirable Crystalline Silica, including engineering controls, work practices, and respirators to be used;
- The contents of the OSHA Respirable Crystalline Silica Construction Standard;
- The identity of the Competent Person designated by ARDL; and
- The purpose and a description of the company's Medical Surveillance Program.

ARDL will make a copy of the OSHA Respirable Crystalline Silica Construction Standard readily available without cost to any employee who requests it.

12. WARNING SIGNS

Warning signs will be posted to mark the boundaries of work areas contaminated with crystalline silica. These signs will warn workers about the hazard and specify any protective equipment required. The sign will contain the following words or similar words:

*Warning - Crystalline Silica Work Area
Improper handling or exposure to the dust may
cause silicosis and death. Respirator Required.*

13. SAFE WORK PRACTICES

The primary means of protecting workers will be through the use of less toxic materials, enclosed systems, local exhaust ventilation, wet methods, and good work practices.

The following measures will be used to reduce exposure to crystalline silica in the workplace:

- Wet down the dust at the point of generation.
- Install local exhaust ventilation to prevent dust from being released into the air.
- During rock drilling, flow water through the drill stem.
- Install dust collection systems onto machines or equipment that generated dust.
- Use concrete/masonry saws that provide water to the blade.

Silica sand or other substances containing more than 1% crystalline silica will not be used for abrasive blasting.

Good personal hygiene will be practiced to avoid unnecessary exposure. Eating, drinking, use of tobacco products, or applying cosmetics will not be done in areas where there is dust containing crystalline silica.

If possible, employees will shower and change into clean clothes before leaving the worksite to prevent contamination of cars, homes, and other work areas.

14. RECORDKEEPING

ARDL will make and maintain an accurate record of all exposure measurements taken to assess employee exposure to Respirable Crystalline Silica. This record will include at least the following information:

- The date of measurement for each sample taken;
- The task monitored;
- Sampling and analytical methods used;
- Number, duration, and results of samples taken;
- Identity of the laboratory that performed the analysis;
- Type of PPE, such as respirators, worn by the employees monitored; and
- Name, social security number, and job classification of all employees represented by the monitoring.

ARDL will ensure that exposure records are maintained and made available in accordance with 29 CFR 1910.1020. Exposure records will be kept for at least 30 years.

The employer shall make and maintain an accurate record of all objective data relied upon to comply with the requirements of the OSHA Respirable Crystalline Silica Construction Standard. This record shall include at least the following information:

- The Crystalline Silica-containing material in question;
- The source of the objective data;
- The testing protocol and results of testing;
- A description of the process, task, or activity on which the objective data were based; and
- Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

ARDL will ensure that objective data are maintained and made available in accordance with 29 CFR 1910.1020. Objective data records will be kept for at least 30 years.

ARDL will make and maintain an accurate record for each employee enrolled in the Medical Surveillance portion of this program. The record shall include the following information about the employee:

- Name and social security number;
- A copy of the PLHCPs and/or Specialist's written medical opinions; and
- A copy of the information provided to the PLHCP and Specialists.

ARDL will ensure that medical records are maintained and made available in accordance with 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records." Medical records will be kept under lock and key for at least the duration of employment plus 30 years. It is necessary to keep these records for extended periods because Silica-related diseases such as cancer often cannot be detected until several decades after exposure. However, if an employee works for an employer for less than one year, the employer does not have to keep the medical records after employment ends, as long as the employer gives those records to the employee.

Employee medical records are provided upon request of the employee or to anyone having written consent of the employee within 15 working days. Such requests should be sent to ARDL, Attention: Ms. Valerie Jenkins.

15. PROGRAM EVALUATION

This program will be reviewed and evaluated on an annual basis by ARDL's Corporate Safety Consultant unless changes to operations, the OSHA Respirable Crystalline Silica Construction Standard (29 CFR 1926.1153), or another applicable OSHA Standard require an immediate re-validation of this program.

APPENDIX A
Table 1: Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica

Construction Task or Equipment Operation	Engineering and Work Practice Control Methods	Required Respiratory Protection	
		≤4 hours/shift	>4 hours/shift
1 Stationary masonry saws	<ul style="list-style-type: none"> • Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
2a Handheld power saws (any blade diameter) when used outdoors	<ul style="list-style-type: none"> • Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	N95* Filtering Facepiece or Half Mask
2b Handheld power saws (any blade diameter) when used indoors or in an enclosed area	<ul style="list-style-type: none"> • Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	N95* Filtering Facepiece or Half Mask	N95* Filtering Facepiece or Half Mask
3 Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less) for tasks performed outdoors only	<ul style="list-style-type: none"> • Use saw equipped with commercially available dust collection system. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency. 	None	None
4a Walk-behind saws when used outdoors	<ul style="list-style-type: none"> • Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
4b Walk-behind saws when used indoors or in an enclosed area	<ul style="list-style-type: none"> • Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	N95* Filtering Facepiece or Half Mask	N95* Filtering Facepiece or Half Mask
5 Drivable saws for tasks performed outdoors only	<ul style="list-style-type: none"> • Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
6 Rig-mounted core saws or drills	<ul style="list-style-type: none"> • Use tool equipped with integrated water delivery system that supplies water to cutting surface. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None

Construction Task or Equipment Operation	Engineering and Work Practice Control Methods	Required Respiratory Protection	
		≤4 hours/shift	>4 hours/shift
7 Handheld and stand-mounted drills (including impact and rotary hammer drills)	<ul style="list-style-type: none"> Use drill equipped with commercially available shroud or cowl with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes. 	None	None
8 Dowel drilling rigs for concrete for tasks performed outdoors only	<ul style="list-style-type: none"> Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes. 	N95* Filtering Facepiece or Half Mask	N95* Filtering Facepiece or Half Mask
9a Vehicle- mounted drilling rigs for rock and concrete	<ul style="list-style-type: none"> Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector. 	None	None
9b Vehicle- mounted drilling rigs for rock and concrete	<ul style="list-style-type: none"> Operate from within an enclosed cab and use water for dust suppression on drill bit. 	None	None
10a Jackhammers and handheld powered chipping tools when used outdoors	<ul style="list-style-type: none"> Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. 	None	N95* Filtering Facepiece or Half Mask
10b Jackhammers and handheld powered chipping tools when used indoors or in an enclosed area	<ul style="list-style-type: none"> Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact. 	N95* Filtering Facepiece or Half Mask	N95* Filtering Facepiece or Half Mask
10c Jackhammers and handheld powered chipping tools when used outdoors	<ul style="list-style-type: none"> Use tool equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. 	None	N95* Filtering Facepiece or Half Mask
10d Jackhammers and handheld powered chipping tools when used indoors or in an enclosed area	<ul style="list-style-type: none"> Use tool equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. 	N95* Filtering Facepiece or Half Mask	N95* Filtering Facepiece or Half Mask
11 Handheld grinders for mortar removal (i.e., tuckpointing)	<ul style="list-style-type: none"> Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. 	N95* Filtering Facepiece or Half Mask	Powered Air-Purifying Respirator (PAPR) with P100 Filters

Construction Task or Equipment Operation	Engineering and Work Practice Control Methods	Required Respiratory Protection	
		≤4 hours/shift	>4 hours/shift
12a Handheld grinders for uses other than mortar removal for tasks performed outdoors only	<ul style="list-style-type: none"> Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
12b Handheld grinders for uses other than mortar removal when used outdoors	<ul style="list-style-type: none"> Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. 	None	None
12c Handheld grinders for uses other than mortar removal when used indoors or in an enclosed area	<ul style="list-style-type: none"> Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism. 	None	N95* Filtering Facepiece or Half Mask
13a Walk-behind milling machines and floor grinders	<ul style="list-style-type: none"> Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. 	None	None
13b Walk-behind milling machines and floor grinders	<ul style="list-style-type: none"> Use machine equipped with dust collection system recommended by the manufacturer. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. When used indoors or in an enclosed area, use a HEPA- filtered vacuum to remove loose dust in between passes. 	None	None
14 Small drivable milling machines (less than half-lane)	<ul style="list-style-type: none"> Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions. 	None	None
15a Large drivable milling machines (half-lane and larger) for cuts of any depth on asphalt only	<ul style="list-style-type: none"> Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions. 	None	None

Construction Task or Equipment Operation	Engineering and Work Practice Control Methods	Required Respiratory Protection	
		≤4 hours/shift	>4 hours/shift
15b Large drivable milling machines (half-lane and larger) for cuts of four inches in depth or less on any substrate	<ul style="list-style-type: none"> Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions. 	None	None
15c Large drivable milling machines (half-lane and larger) for cuts of four inches in depth or less on any substrate	<ul style="list-style-type: none"> Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions. 	None	None
16 Crushing machines	<ul style="list-style-type: none"> Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points). Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions. Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station. 	None	None
17a Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	<ul style="list-style-type: none"> Operate equipment from within an enclosed cab. 	None	None
17b Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	<ul style="list-style-type: none"> When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions. 	None	None
18a Heavy equipment and utility vehicles for tasks such as grading and excavating but not including demolishing, abrading, or fracturing silica-containing materials	<ul style="list-style-type: none"> Apply water and/or dust suppressants as necessary to minimize dust emissions. 	None	None
18b Heavy equipment and utility vehicles for tasks such as grading and excavating but not including demolishing, abrading, or fracturing silica-containing materials	<ul style="list-style-type: none"> When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab. 	None	None

* Or Greater Efficiency

APPENDIX B

IH SAMPLING FORM																																																																																																																																		
Sample Description																																																																																																																																		
(Project Code-Yr/Mth/Day-Sample Description-Sample # (start with 001))																																																																																																																																		
Sample Type		(Personal) (Area) (Blank) (Bulk) (Grab) (Source)																																																																																																																																
Person Sampled (Employee Last name, First Name)																																																																																																																																		
EHS Job (Job Description)		(Carpenter) (Finisher) (Iron Worker) (Laborer) (Operator) (Tech Eng) (Teamster)																																																																																																																																
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APPENDIX C

RISK MANAGEMENT MATRIX

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Hazard Communication Program

For



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HAZARD COMMUNICATION PROGRAM

1. PURPOSE

The purpose of this plan is to establish a program and procedures for the safe use of hazardous chemical substances at ARDL, Inc. (ARDL). This plan applies to all ARDL facilities, both home and field offices. The Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) 29 CFR 1910.1200 (General Industry) and 29 CFR 1926.59 (Construction Industry) call for the development of a hazard communication program when employees may be exposed to any chemical in the workplace under normal conditions of use or in a foreseeable emergency. In 2012, OSHA revised the HCS to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This program has been developed to comply with the requirements of the OSHA HCS 2012. The written hazard communication program will include and address the following criteria to satisfy the minimum requirements of the OSHA HCS 2012:

- List of all hazardous chemicals known to be present in the workplace or individual work area
- Methods used to ensure that all containers, including pipes and holding tanks, are labeled, tagged or marked properly
- Methods used to obtain and maintain safety data sheets (SDSs)
- Methods used to provide employees with information and training on hazardous chemicals in their work areas
- Methods used to inform employees of the hazards of nonroutine work practices
- Methods used to provide the employees of other employers (e.g., consultants, construction contractors, and temporary employees) on-site access to SDSs for each hazardous chemical that the other employer's employees may be exposed to while working in the workplace
- Methods used to inform the employees of other employers about precautionary measures that need to be taken to protect themselves during normal operating conditions and in foreseeable emergencies in the workplace
- Methods used to inform the employees of other employers of the labeling system used in the workplace

2. COMPANY HAZARD COMMUNICATION POLICY

The management of ARDL is committed to preventing accidents and ensuring the safety and health of our employees. ARDL will comply with all applicable federal and state health and safety rules and provide a safe, healthful environment for all our employees. To ensure that information about the dangers of all hazardous chemicals used by the company is known by all affected employees, the following hazardous communication program has been established. Under this program, employees will be informed of the contents of the OSHA Hazard Communications Standard (HCS), the hazardous properties of chemicals in the work area, safe handling procedures, and chemical protective measures.

This written hazard communication program will be available in the local office for review and use by all workers.

3. PROGRAM RESPONSIBILITIES

a. Corporate Management

Management has the following responsibilities:

1. To establish guidelines for hazard communication that meet the needs of the company and are compliant with OSHA and local regulations.
2. To designate a Hazardous Communication Program Manager (HCPM) to administrate and supervise the hazard communication program.
3. To ensure the HCPM is provided with the proper materials for communicating hazards to employees.
4. To provide training to employees on hazard communication.
5. To ensure the company is operating in accordance with this policy by performing periodic reviews and audits.
6. To review this safety policy for effectiveness periodically and when program deficiencies are discovered.

b. Hazard Communication Program Manager

The HCPM has the following responsibilities:

1. To supervise the implementation and execution of the hazard communication program.
2. To provide or coordinate hazard communication training for employees.
3. To ensure that all chemicals used at the facility are included on the chemical inventory list.
4. To ensure that the company hazard communication program meets the requirements of OSHA.
5. To schedule periodic audits to monitor program effectiveness.

c. Site Hazard Communication Manager

The Site Hazard Communication Manager (SHCM) has the following responsibilities:

1. To ensure that materials received by the company are properly labeled and have an SDS.
2. To ensure that the appropriate hazard warnings are clearly posted, as appropriate, on the construction site and are visible and maintained.
3. To ensure that proper SDSs are submitted and filed at the construction site office and are available for all personnel to review.
4. To ensure that all employees have received the proper training prior to working with or near chemicals.
5. To facilitate communication between field personnel and management on safety issues.

d. Employees/Field Personnel

Employees have the following responsibilities:

1. Attend required safety training classes prior to starting work.
2. Make sure that all chemicals used in the workplace are properly labeled.
3. Identify hazards before starting a job
4. Review the SDS and container label for each chemical prior to using it.
5. Ensure that all chemicals are properly handled and stored.
6. Notify the supervisor of torn, damaged, or illegible labels or of unlabeled containers
7. Use controls and/or personal protective equipment provided by the company to minimize exposure
8. Follow company instructions and warnings pertaining to chemical handling and usage
9. Ensure that all chemicals are disposed of properly, including updating all inventory control lists.
10. Know and understand the consequences associated with not following company policy concerning the safe handling and use of chemicals

4. CHEMICAL CONTAINER LABELING REQUIREMENTS

The Site Hazard Communication Manager will verify that all containers with hazardous chemicals entering the project site are properly labeled with: the original manufacturer's label that includes a product identifier identifying the hazardous material; the appropriate hazard warnings, pictogram(s), signal word(s), hazard statement(s), and precautionary statement(s); and the name, address, and telephone number of the manufacturer. Appropriate labels must be on all containers, regardless of size. Containers must be approved and recommended for storage and/or dispensing of the specific hazardous chemicals contained in them.

ARDL also requires and enforces the use of the GHS labeling system for all secondary containers. When a chemical is transferred from the original container to a portable or secondary container, the container will be labeled, tagged, or marked with a GHS label containing the following information:

- a. Product identifier
- b. Signal word
- c. Hazard statement(s)
- d. Pictogram(s)
- e. Precautionary statement(s)

Portable containers of hazardous materials do not require labeling if the materials are transferred from labeled containers and are intended for immediate use by the employee who performs the transfer. Portable containers not immediately used will be emptied and cleaned when necessary, or prior to the end of each shift.

When a hazardous chemical is, or may be, present in a specific area (e.g., where extensive welding occurs), the entire area will be labeled with a warning placard.

Workplace labels or other forms of warning will be legible, in English, and prominently displayed on the container or readily available in the work area throughout each work shift. If employees speak languages other than English, the information in the other language(s) may be added to the material presented, providing the information is presented in English as well.

5. SAFETY DATA SHEETS

The manufacturer or importer of a chemical is required by OSHA to develop an SDS that contains specific, detailed information about the chemical's hazard using a specified format. The distributor or supplier of the chemical is required to provide this SDS to the purchaser.

If problems arise in obtaining an SDS from the chemical manufacturer, importer, or distributor, a phone call will be made to request an SDS and to verify that the SDS has been sent. The phone call will be logged, and a letter will be sent the same day. ARDL will maintain a written record of all efforts to obtain SDSs. If these efforts fail to produce an SDS, the local OSHA office will be contacted for assistance.

Prior to the start of each specific construction activity, SDSs shall be submitted with each AHA in which a hazardous chemical will be used during the construction activity. During Preparatory Meetings where AHAs are reviewed with all field personnel, the applicable SDSs will also be reviewed for each hazardous chemical. The SHCM will maintain all SDSs in an organized fashion in the construction site office for all employees to view at will.

A duplicate set of SDS information will be maintained by the Hazard Communication Program Manager at ARDL's corporate office. SDS books and the Hazardous Chemical List will be maintained and kept up to date by the Hazard Communication Program Manager. As obsolete SDSs are replaced by updated copies, the obsolete SDSs will be retained for 30 years.

6. EMPLOYEE INFORMATION AND TRAINING

Employees included under the hazard communication program will receive the following information and training prior to exposure to hazardous chemicals and when new chemical hazards are introduced to their work area:

- a. Requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 (General Industry) or 29 CFR 1926.59 (Construction Industry)
- b. Operations in the work area where hazardous chemicals are present
- c. Location and availability of the hazard communication program, chemical inventory list, and SDSs
- d. Methods and observations used to detect the presence or release of a hazardous chemical in the work area, such as monitoring devices, visual appearance, or odor of hazardous chemicals when being released
- e. Physical, health, simple asphyxiation, combustible dust and pyrophoric gas hazards, as well as hazards not otherwise classified as chemicals in the work area
- f. Measures employees can take to protect themselves from hazards, such as appropriate controls, work practices, emergency and spill cleanup procedures, and PPE to be used
- g. Explanation of the labels received on shipped containers
- h. Explanation of the workplace labeling system
- i. Explanation of the SDS, including order of information and how employees can obtain and use the appropriate hazard information

Each affected employee working for a subcontractor or service company is required to review the training material with the Site Hazard Communication Manager and sign the acknowledgment form, which will be placed in the employee's file. This training is to be done during the new employee orientation process before the new employee assumes status as an active employee. Employees will receive training on any new hazardous chemical/material introduced into the workplace before the chemical/material is used or when changes are made to the program.

7. NON-ROUTINE TASKS

The Site Hazard Communication Manager and the immediate supervisor of an employee performing a nonroutine task, such as cleaning machinery and other process equipment, is responsible for ensuring that adequate training has been provided to the employee on any hazards associated with the nonroutine task. Employees share in this responsibility by ensuring that their immediate supervisor knows that the nonroutine task will be performed.

Special work permits are required for the performance of certain nonroutine tasks, such as entry to confined spaces, breaking and opening piping systems, and welding and burning. For some special tasks, employees are required to follow special lockout/tagout procedures to ensure that all machinery motion has stopped, and energy sources are isolated prior to and during the performance of such tasks.

8. RECORDKEEPING

Records pertaining to the hazard communication program will be maintained by the SHCM. The SHCM will keep the following records:

- Chemical inventory list
- Hazardous material reviews
- Copies of phone call logs and letters requesting SDSs
- Employee training records
- Warnings issued to employees for not following the hazard communication program

ATTACHMENT A

Acknowledgement of Receipt of Hazard Communication Training

My signature below acknowledges I have received training concerning Hazard Communications. I understand that this training fulfills the employee training requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard.

The jobsite and classroom training included the following:

- Understanding the purpose and scope of the OSHA Hazard Communication Standard.
- Explanation of the existence of federal, state and local right-to-know laws.
- Definition of the classification "hazardous chemical."
- Explanation of situations and elements that must be present for a material to be considered a health hazard.
- Explanation and interpretation of labels, what is required on all containers, and the Hazard Materials Identification System (HMIS).
- Understanding and interpretation of SDSs and pictogram(s).
- All policies and procedure requirements of ARDL and my responsibilities as an employee.
- Policies and procedures to follow in case of exposure.

I, _____, have read and understand ARDL's Hazard Communication Program. Furthermore, I understand that failure to follow the requirements of this Hazard Communication Program can result in disciplinary action, including removal from the work area site and possible termination.




Employee Signature: _____ Date: _____

Sample Hazardous Materials and Chemicals List




[illegible]

ATTACHMENT C




Pictograms and Hazards

HEALTH HAZARD	FLAME	GAS CYLINDER
		
Carcinogen Mutagenicity Reproductive Toxicity Respiratory Sensitizer Target Organ Toxicity Aspiration Toxicity	Flammable Pyrophorics Self-Heating Emits Flammable Gas Self-Peroxides	Gases Under Pressure

Class Notes:

CORROSION	EXCLAMATION MARK*	FLAME OVER CIRCLE
		
Skin Corrosion/Burns Eye Damage Corrosive to Metals	Irritant (skin and eye) Skin Sensitizer Acute Toxicity Narcotic Effects Respiratory Tract Irritant Hazardous to Ozone Layer *(Non-Mandatory)	Oxidizers

Class Notes:

EXPLODING BOMB	SKULL AND CROSSBONES	ENVIRONMENT*
		
Explosives Self-Reactives Organic Peroxides	Acute Toxicity (fatal or toxic)	Aquatic Toxicity *(Non-Mandatory)

Class Notes:

ATTACHMENT D

Pictogram Memory Exercise



(Name this Pictogram)



(Name this Pictogram)



(Name this Pictogram)



(Name this Pictogram)



(Name this Pictogram)



(Name this Pictogram)



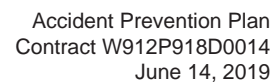
(Name this Pictogram)



Name this Pictogram



(Name this Pictogram)



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ATTACHMENT F

Sample Label

PRODUCT IDENTIFIER

CODE

Product Name

SUPPLIER IDENTIFICATION

Company Name

Street Address

City

State

Postal Code

Country

Emergency Phone Number

PRECAUTIONARY STATEMENTS

Keep container tightly closed. Store in cool, well ventilated place that is locked.

Keep away from heat/sparks/open flame. No smoking.

Only use non-sparking tools.

Use explosion-proof electrical equipment.

Take precautionary measure against static discharge.

Ground and bond container and receiving equipment. Do not breathe vapors.

Wear protective gloves.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or carbon dioxide (CO₂) fire extinguisher to extinguish.

First Aid

If exposed call Poison Center.

If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.

HAZARD PICTOGRAMS



SIGNAL WORD

Danger

HAZARD STATEMENT

Highly flammable liquid and vapor. May cause liver and kidney damage.

SUPPLEMENTAL INFORMATION

Directions for use

Fill weight:

Lot Number

Gross weight:

Fill Date:

Expiration Date:

ATTACHMENT G

Sections on a Safety Data Sheet

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format that must include the section numbers, headings, and associated information listed below:

Section 1, Identification

Includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; and restrictions on use.

Section 2, Hazard(s) identification

Includes all hazards regarding the chemical and required label elements.

Section 3, Composition/information on ingredients.

Includes information on chemical ingredients and trade secret claims.

Section 4, First-aid measures

Includes important symptoms/effects, including acute or delayed and required treatment.

Section 5, Firefighting measures

Lists suitable extinguishing techniques and equipment and chemical hazards from fire.

Section 6, Accidental release measures

Lists emergency procedures; protective equipment; proper methods of containment; and cleanup.

Section 7, Handling and storage

Lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection

Lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; and personal protective equipment.

Section 9, Physical and chemical properties

Lists the chemical's characteristics.

Section 10, Stability and reactivity

Lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information

Includes routes of exposure; related symptoms including acute and chronic effects; and numerical measures of toxicity.

Section 12, Ecological information*

Section 13, Disposal considerations*

Section 14, Transport information*

Section 15, Regulatory information*

Section 16, Other information

Includes the date of preparation or last revision.

Employers must ensure that SDSs are readily accessible to employees.

See Appendix D of 29 CFR 1910.1200 for a detailed description of SDS contents.

*Note: Since other agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 of 29 CFR 1910.1200(g)(2)

ATTACHMENT H

OSHA Resources

The following items can be downloaded from the OSHA website at <https://www.osha.gov/pls/publications/publication.html> or ordered from OSHA by calling (800) 321-6742:

Hazard Communication: Hazard Communication Wallet Card
OSHA 3658 - 2013

Hazard Communication Standard: December 1st, 2013 Training Requirements for the Revised Standard Fact Sheet
OSHA FS-3642 - 2013

Hazard Communication Standard: Labels and Pictograms- Brief
OSHA BR-3636 - 2013

Hazard Communication Safety Data Sheets
OSHA 3493 – 2012

Hazard Communication Standard Pictograms
OSHA 3491 - 2012

Hazard Communication Standard: Safety Data Sheets – Brief
OSHA BR-3514 - 2013

Hazard Communication: Steps to an Effective Hazard Communication Program for Employers That Use Hazardous Chemicals Fact Sheet
OSHA FS-3696 – 2014

Bloodborne Pathogen Control Plan

Prepared by:



**400 Aviation Drive
Mt. Vernon, IL 62864**

1. Bloodborne Pathogen Control Plan

1. Exposure Control Plan Policy

ARDL is committed to providing a safe and healthful work environment for all employees. In pursuit of this goal, the following Exposure Control Plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with OSHA standard 29 CFR 1910.1030, "Occupational Exposure to Bloodborne Pathogens." It must be understood that exposure to bloodborne pathogens is not only a risk to employees through blood but can occur through exposure to Other Potentially Infectious Materials (OPIM) or bodily fluids including saliva, cerebrospinal fluid, synovial fluid, or any other bodily fluid.

During the course of construction activities, it is possible to be exposed to bloodborne pathogens in a number of ways. It is the responsibility of the employer to require appropriate personal protective equipment (PPE) in all operations where there is a possibility of exposure to hazardous conditions or where OSHA regulations indicate the need for using such equipment to reduce the hazards to the employees.

Employees that provide First Aid are at risk of exposure to OPIM during the administration of care. Employees may also be exposed to bloodborne pathogens while administering CPR. While these two scenarios seem the most likely, other scenarios may occur during the course of normal operations.

Employees performing demolition, remodeling, and even maintenance activities may be at risk. While tradesmen such as plumbers, pipefitters, and others who, at times, may be engaged in activities which are not generally considered to have occupational exposure as defined by OSHA standards unless they are working in health care facilities, it is the responsibility of ARDL to determine which job classifications or specific tasks and procedures may involve occupational exposure. If it is determined that sufficient evidence of reasonably anticipated exposure exists among employees performing any construction activity at any time, ARDL will provide the protections required by OSHA standard 29 CFR 1910.1030 to those employees.

This ECP is a key document to assist ARDL in implementing and ensuring compliance with the standard, thereby protecting our employees. This ECP includes:

A. Determination of employee exposure

B. Implementation of various methods of exposure control, including:

- Training
- Universal precautions
- Engineering and work practice controls
- Personal protective equipment
- Housekeeping

C. Hepatitis B vaccinations (voluntary)

D. Post-exposure evaluation and follow-up

E. Communication of hazards to employees and training

F. Recordkeeping

G. Procedures for evaluating circumstances surrounding exposure incidents

Implementation methods for these elements of the standard are discussed in the subsequent pages of this ECP.

2. Program Administration

Mr. Robert Jurgiel, CIH, is responsible for implementation of the ECP. He will maintain, review, and update the ECP whenever necessary, at least annually, and whenever necessary to include new or modified tasks and procedures. Mr. Jurgiel's contact phone number is 636-757-3060.

Those employees considered to have occupational exposure to blood or OPIM must comply with the procedures and work practices outlined in this ECP. ARDL will provide and maintain all necessary PPE, engineering controls, labels, and other safety equipment is available, as needed and appropriate.

Mr. Jurgiel is responsible for ensuring that all medical actions required by the standard are performed and that appropriate employee health and OSHA records are maintained. Also included in his responsibilities are: training, training documentation, and ensuring that this written ECP is available to all employees, OSHA representatives, and the Contract Authority.

3. Methods of Implementation and Control

A. Universal Precautions

All employees covered by this ECP shall utilize Universal Precautions when determined to be at risk of occupational exposure.

Universal Precautions are defined as:

- (1) treating all blood or OPIM and preventing contact with those materials,
- (2) using gloves, masks, and other appropriate PPE when exposure is anticipated,
- (3) use of engineering and work practices to limit exposure.

B. Exposure Control Plan

Employees covered by the bloodborne pathogens standard receive an explanation of this ECP during their initial training session. It will also be reviewed in their annual refresher training. All employees can review this plan at any time during their work shifts.

Mr. Jurgiel is responsible for reviewing and updating the ECP annually or more frequently if necessary to reflect any new or modified tasks and procedures that affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

C. Engineering Controls and Work Practices

Engineering controls and work practice controls will be used to prevent or minimize exposure to bloodborne pathogens. Prior to the start of activities that may result in exposure, Management and Safety personnel will meet with employees performing the work and discuss any risks of exposure and the engineering controls and work practice controls that will be employed to minimize the risk.

If required due to an employee's existing health issue, Sharps disposal containers shall be provided and maintained on the project in the project trailer. Sharps disposal containers shall be replaced on a regular schedule or whenever necessary to prevent overfilling.

D. Personal Protective Equipment (PPE)

PPE required by this ECP is provided to ARDL employees at no cost to them. Training in the use of the appropriate PPE for specific tasks or procedures will be provided by ARDL safety personnel.

Types of PPE for preventing exposure to bloodborne pathogens per this ECP that are available to employees are as follows:

- Gloves
- Protective Glasses
- CPR mask
- Biohazard Bag
- Bloodborne Pathogen kit

All employees using PPE must observe the following precautions:

- Wash hands immediately or as soon as feasible after removing gloves or other PPE.
- Remove PPE after it becomes contaminated and before leaving the work area.
- Used PPE may be disposed of in designated and approved trash receptacles bearing the appropriate labels.
- Wear appropriate gloves when it is reasonable to anticipate: hand contact with blood or OPIM, or when handling or touching contaminated items or surfaces. Replace gloves if torn, punctured, or contaminated, or if their ability to function as a barrier is compromised.
- Utility gloves may be decontaminated for reuse if their integrity is not compromised; discard utility gloves if they show signs of cracking, peeling, tearing, puncturing, or deterioration.
- Never wash or decontaminate disposable gloves for reuse.
- Wear appropriate face and eye protection when splashes, sprays, spatters, or droplets of blood or OPIM pose a hazard to the eye, nose, or mouth.
- Remove immediately or as soon as feasible any garment contaminated by blood or OPIM, in such a way as to avoid contact with the outer surface.

E. Housekeeping

Any regulated or contaminated waste generated during work activities shall be immediately disposed of properly. Regulated or contaminated waste generated during construction activities shall be placed in containers which are closable, constructed to contain all contents, and prevent leakage. Containers shall be appropriately labeled or color-coded and closed prior to removal to prevent spillage or protrusion of contents during handling.

Be aware that broken glassware that may be contaminated shall only be picked up using mechanical means, such as a brush and dustpan.

F. Laundry

If an employee's articles of clothing become contaminated, ARDL will have the clothing laundered by a professional service specializing in processing contaminated clothing, upon request by the employee. The following laundering requirements must be met:

- handle contaminated laundry as little as possible, with minimal agitation
- place wet contaminated laundry in leak-proof, labeled, or color-coded containers before transport. Use bags marked with the bio-hazard symbol for this purpose.
- wear the following PPE when handling and/or sorting contaminated laundry: appropriate gloves, goggles (appropriate eye protection).

G. Labels

Proper labeling of all contaminated waste, regulated waste, and laundry shall be utilized and properly affixed to all waste containers. Employees are to notify management personnel immediately if they discover contaminated and regulated waste containers without proper labels.

4. Hepatitis B Vaccination

ARDL may provide training to employees on Hepatitis B vaccinations, addressing safety, benefits, efficacy, methods of administration, and availability.

The Hepatitis B vaccination series is available at no cost after initial employee training and within 10 days of initial assignment to all employees identified in the exposure determination section of this plan. Vaccination is encouraged for employees at risk of exposure due to First Responder requirements, including First Aid and CPR certified employees unless: 1) documentation exists that the employee has previously received the series; 2) antibody testing reveals that the employee is immune; or 3) medical evaluation shows that vaccination is contraindicated.

However, if an employee declines the vaccination, the employee must sign a declination form. Employees who decline may request and obtain the vaccination at a later date at no cost. Documentation of refusal of the vaccination is kept in the personnel file.

Following the medical evaluation, a copy of the health care professional's written opinion will be obtained and provided to the employee within 15 days of the completion of the evaluation. It will be limited to whether the employee requires the hepatitis vaccine and whether the vaccine was administered.

5. Post-Exposure Testing and Follow-up

Should an exposure incident occur, immediately administer first aid by cleaning the wound, flushing eyes or other mucous membranes, etc. An immediate and confidential medical evaluation and follow-up will be conducted and the following activities will be performed:

- Document the routes of exposure and how the exposure occurred.
- Identify and document the source individual (unless the employer can establish that identification is infeasible or prohibited by state or local law).
- Obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, HCV, and HBV infectivity; document that the source individual's test results were conveyed to the employee's health care provider.
- If the source individual is already known to be HIV, HCV, and/or HBV positive, new testing need not be performed.

- Assure that the exposed employee is provided with the source individual's test results and with information about applicable disclosure laws and regulations concerning the identity and infectious status of the source individual (e.g., laws protecting confidentiality).
- After obtaining consent, collect exposed employee's blood as soon as feasible after exposure incident, and test blood for HBV and HIV serological status.
- If the employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

6. Post-Exposure Evaluation and Follow-up

ARDL will ensure that the health care professional(s) responsible for employees' Hepatitis B vaccination and post-exposure evaluation and follow-up are given a copy of OSHA's blood-borne pathogens standard and that the health care professional(s) evaluating an employee after an exposure incident receives the following:

- a description of the employee's job duties relevant to the exposure incident
- route(s) of exposure
- circumstances of exposure
- if possible, results of the source individual's blood test
- relevant employee medical records, including vaccination status

ARDL will ensure that the employee will receive a copy of the evaluating health care professional's written opinion within 15 days after completion of the evaluation.

7. Procedures for Evaluating the Circumstances Surrounding an Exposure Incident

ARDL's Corporate Safety Director, Mr. Robert Jurgiel, will review the circumstances of all exposure incidents to determine:

- a description of the work being performed at the time of exposure
- location of the incident
- work practices were correctly followed
- engineering controls in use at the time and were they correctly implemented
- PPE and clothing that was being donned at the time of exposure
- employee's training

If revisions to this ECP are necessary, ARDL's Corporate Safety Director, Mr. Robert Jurgiel, will ensure that appropriate changes are made. (Changes may include an evaluation of safer work practices, engineering controls, additional PPE, or may include adding employees to the exposure determination list, etc.)

8. Employee Training

All employees who have occupational exposure to bloodborne pathogens will receive initial and annual training conducted by ARDL's Corporate Safety Director, Mr. Robert Jurgiel.

All employees who have occupational exposure to bloodborne pathogens receive training on the epidemiology, symptoms, and transmission of bloodborne pathogen diseases. In addition, the training program covers, at a minimum, the following elements:

- a copy and explanation of the OSHA bloodborne pathogen standard
- an explanation of our ECP and how to obtain a copy
- an explanation of methods to recognize tasks and other activities that may involve exposure to blood and OPIM, including what constitutes an exposure incident
- an explanation of the use and limitations of engineering controls, work practices, and PPE
- an explanation of the types, uses, location, removal, handling, decontamination, and disposal of PPE
- an explanation of the basis for PPE selection
- information on the Hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that it will be offered free of charge
- information on the appropriate actions to take and persons to contact in an emergency involving blood or OPIM
- the methods and use of devices to minimize risk of exposure while administering CPR
- proper means and methods of administering First Aid to minimize risk of exposure during treatment of accident victims
- proper decontamination and washing of exposed body parts
- proper decontamination of equipment used during construction activities
- an explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available
- information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident
- an explanation of the signs and labels and/or color coding required by the standard and used at this facility
- an opportunity for interactive questions and answers with the person conducting the training session.

Training materials for this facility are available for employees of this project by contacting Mr. Robert Jurgiel, ARDL's Corporate Safety Consultant at 636-757-3060.

9. Recordkeeping

A. Training Records

Training records are compiled and stored for each employee upon completion of each safety and health training and course study. These documents will be kept for at least three years by ARDL at the corporate office.

The training records include:

- dates of the training sessions
- contents or a summary of the training sessions
- names and qualifications of persons conducting the training
- names and job titles of all persons attending the training sessions

Employee training records are available and will be provided to the employee or the employee's authorized representative within 15 working days of request. Such requests should be sent to ARDL, Attention: Ms. Valerie Jenkins.

B. Medical Records

Medical records are maintained for each employee with occupational exposure in accordance with 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records."

ARDL's Corporate Safety Director, Mr. Robert Jurgiel is responsible for maintenance of the required medical records. These confidential records are kept by ARDL for at least the duration of employment plus 30 years. All medical records will be stored in a secure location and inside a locked storage cabinet within the corporate office of ARDL.

Employee medical records are provided upon employee request or to anyone having written consent of the employee within 15 working days. Such requests should be sent to ARDL, Attention: Ms. Valerie Jenkins.

C. OSHA Recordkeeping

An exposure incident is evaluated to determine if the case meets OSHA's Recordkeeping Requirements (29 CFR 1904). This determination and the recording activities are done by ARDL's Corporate Safety Director, Mr. Robert Jurgiel.

D. Exposure and Injury Log

In addition to the 29 CFR 1904 Recordkeeping Requirements, all percutaneous injuries from contaminated sharps are also recorded in a Sharps Injury Log. All incidences must include at least:

- date of the injury
- type and brand of device involved
- project or work area where the incident occurred
- explanation of how the incident occurred

This log is reviewed as part of the annual program evaluation and maintained for at least five years following the end of the calendar year covered. If a copy is requested by anyone, it must have any personal identifiers removed from the report.

HEPATITIS B VACCINE DECLINATION (MANDATORY)

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Signed: _____ Date: _____

SITE SAFETY & HEALTH PLAN
Old American Zinc Plant Superfund Site
Surrounding Properties Remedial Design
ST. CLAIR COUNTY, IL
REVISION 1.1

IN SUPPORT OF
CONTRACT NO: W912P9-18-D-0014
4 JUN 2019

PREPARED FOR:



US Army Corps of Engineers – St. Louis District
1222 Spruce Street
St. Louis, MO 63103-2822

PREPARED BY:



P. O. Box 1566
400 Aviation Drive
Mt. Vernon, IL 62864-1566

**ARDL, INC.
STATEMENT OF POLICY**

SAFETY AND HEALTH PROGRAM

ARDL, Inc. Management recognizes that the promotion of safe working practices is of the greatest importance to employees, clients, and the company. In addition, Management recognizes its own responsibility for the establishment and implementation of those practices. Accordingly, it is the policy of ARDL that all feasible and practical efforts be made to provide a safe and healthful place of employment for its own employees and for others who may be working around them. Further, it is the policy of ARDL to take all reasonable steps to protect the property of clients and others from accidental damage or loss. The Management of ARDL is convinced a positive program of accident prevention is essential for the company to maintain its position of excellence in our industry. The Management of ARDL firmly believes safety, productivity, and quality is essential to the company's continued success.

ARDL will allocate the resources needed to implement the above-stated policies.

Valerie A. Jenkins
President
ARDL, Inc.

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ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
AHA	Activity Hazard Analysis
ANSI	American National Standards Institute
COR	Contracting Officer Representative
CFR	Code of Federal Regulations
CPR	Cardiopulmonary Resuscitation
dBA	A-weighted decibels
DOT	Department of Transportation
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
FA	Facility Area
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
IEPA	Illinois Environmental Protection Agency
ISEA	International Safety Equipment Association
NFPA	National Fire and Protection Association
NIOSH	National Institute for Occupational Safety and Health
OAZ	Old American Zinc Plant
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
POC	Point of Contact
PM	Project Manager
PPE	Personal Protective Equipment
QA/QC	Quality Assurance / Quality Control
QC	Quality Control
REL	Recommended Exposure Limits
RP	Residential Property
SOP	Standard Operating Procedure
SOW	Scope of Work
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
STEL	Short term exposure limit
TLV	Threshold Limit Value
TWA	Time weighted average
USACE	US Army Corps of Engineers
USEPA	US Environmental Protection Agency
UV	Ultraviolet
WZ	Work Zone
XRF	X-Ray Fluorescence Analyzer
XZ	Exclusion Zone

1.0 INTRODUCTION

This Site Safety and Health Plan (SSHP) has been prepared by ARDL, Inc. (ARDL), Mt. Vernon, Illinois, for use by ARDL, Subcontractors, US Environmental Protection Agency (USEPA), and US Army Corps of Engineers (USACE) personnel participating in project activities associated with the Old American Zinc Plant (OAZ) Superfund Site Surrounding Properties and Remedial Design (RD).

This SSHP will assign responsibility, establish standard operating procedures (SOPs), and provide for contingencies that may arise while working on this project. This SSHP has been created to be in full compliance with the USACE Safety and Health Requirements Manual (EM 385-1-1, revised 30 November 2014).

As the prime contractor, ARDL submits this SSHP to be used for all personnel. Any subcontractor SSHP that applies to project activities will be attached and used to supplement this plan to make it all encompassing.

1.1 VISITORS

ARDL Inc. personnel, USEPA point of contact (POC), Illinois Environmental Protection Agency (IEPA) POC, USACE Contracting Officer Representative (COR), USACE POC, and any subcontractors are not considered visitors; they are considered project personnel. All project personnel will have the credentials and safety training necessary for project activities. All project personnel are required to review this SSHP. Anyone other than project personnel will be considered visitors. All visitors will be required to sign in with the Site Safety and Health Officer (SSHO) or his designee and review this SSHP. Visitors shall have documentation of necessary safety training before entering the work area. Visitors without the required documentation must be escorted by project personnel to enter work area. Visitors must have proper personal protective equipment (PPE) before entering the work area.

1.2 SAFETY POLICY ENFORCEMENT

It is mandatory that the provisions of this plan are reviewed by all project personnel. All personnel working on this project shall abide by this plan. Any supplemental plans used by subcontractors shall conform to this plan at a minimum. All personnel who engage in project activities must be familiar with this plan and comply with its requirements. No deviation from this plan is allowed without the express consent and approval of the USEPA POC, IEPA POC, USACE COR or POC, SSHO, or their designees. The SSHO will be charged with enforcement of the provisions of this plan. Any individuals, project personnel or visitors, who do not comply with the provisions of this plan and the directives of the SSHO, or his designees, shall be immediately removed from work on the site and are subject to disciplinary actions, as appropriate.

The contents of this plan may change based upon additional information made available, monitoring results, or changes in the technical scope of work (SOW). Before implementation, and proposed changes to this plan must be approved by the USACE POC and either the SSHO or his designees.

2.0 PROJECT DESCRIPTION

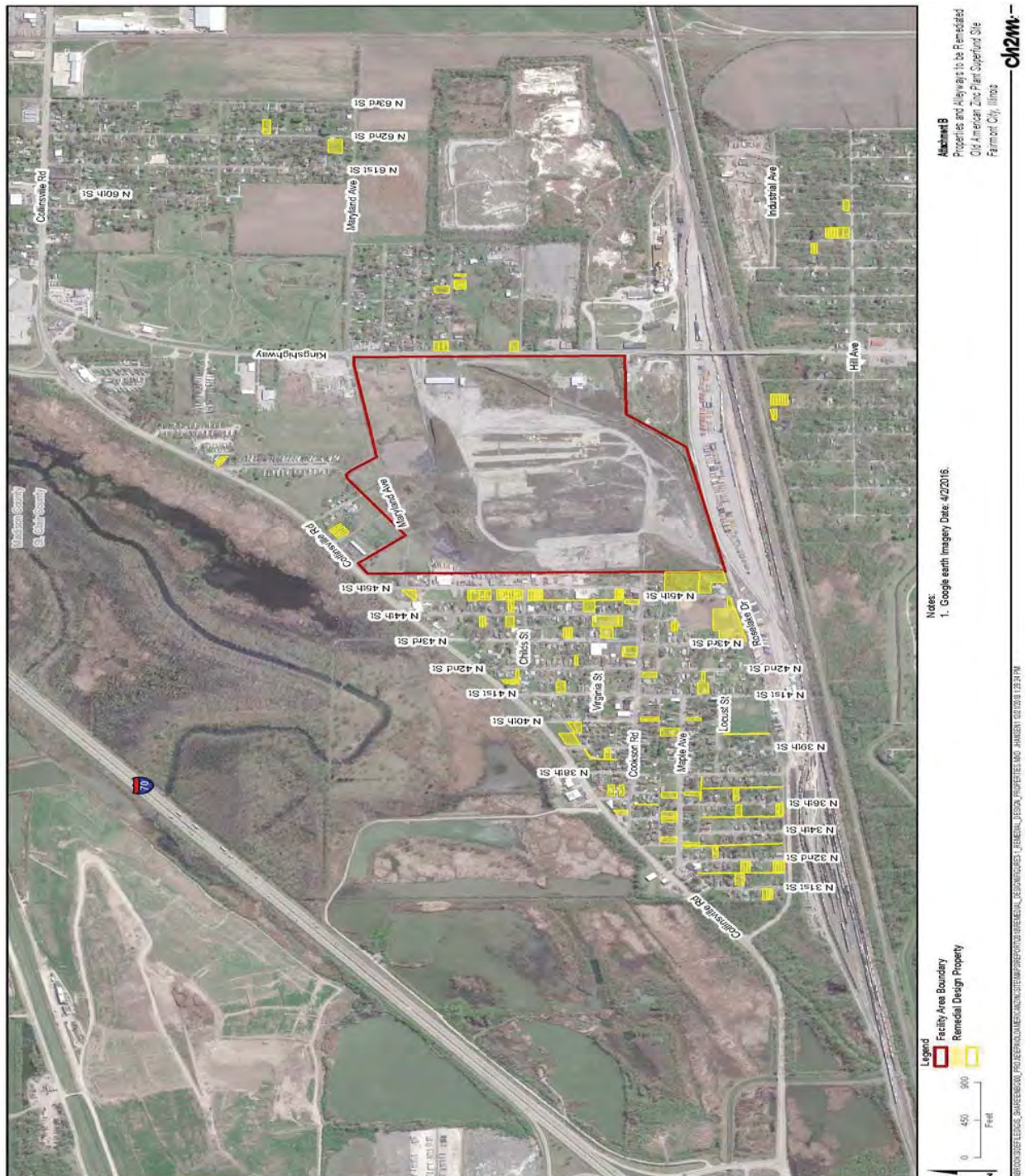
2.1 SITE BACKGROUND

The Facility Area (FA) was historically used as a primary zinc smelter between 1916 and 1953 and produced slab zinc, zinc carbonate, cadmium, lead, and sulfuric acid. The primary residue generated during the smelter's operation was slag which was poured along the northern and western boundary of the FA in a molten state and allowed to cool over time. According to historical aerial photographs, the slag piles were located along the western and northern boundaries of the FA and originally encompassed more than 15 acres. The vitrified slag was allegedly transported to areas outside the FA by employees from the village, local business personnel, and area residents, for use as fill and surfacing material. The zinc furnace operations ceased in 1953, with subsequent operations limited to roasting ores for other smelter facilities and the production of sulfuric acid. These roasting operations continued until 1967 when American Zinc discontinued all operations. Based on aerial photographs, all buildings and other facilities associated with former smelting operations were razed between 1967 and 1978. XTRA Intermodal, Inc. ('XTRA') leased the FA property from American Zinc (now Blue Tee Corporation or 'Blue Tee') between 1976 and 1979 and purchased the property in 1979, including the clinker and other smelter residues, minerals or metals located on the property. From 1976 to sometime after 2003, XTRA operated a transport trucking terminal on the FA which included the lease, storage, and maintenance of a diverse fleet of over-the-road trailers, intermodal ("piggy-back") trailers, and intermodal equipment. Beginning in 1976, XTRA ground and redistributed the stockpiled slag across the FA to build up and level the area for its trucking operations.

2.2 SITE LOCATION AND CHARACTERISTICS

The OAZ Superfund Site is located in the Village of Fairmont City in St. Clair County, Illinois. The OAZ site is approximately 9 miles ENE of St. Louis, MO. The site includes a 132-acre FA and surrounding properties where elevated metal concentrations associated with the facility operation were found in different media. Remedial activities for the OAZ Superfund Site will occur in phases. Samples collected during the remedial investigation conducted by ENTACT in 2008-2009 and predesign sampling activities conducted by CH2M in 2017 indicate that numerous residential properties (RPs) exceeded heavy metals levels of concern. Properties and alleyways with elevated lead concentrations were prioritized for removal action. Sixty-seven (67) properties and nine (9) alleyways require remediation work associated with this SSHP.

Figure 1 - Site Area Map



3.0 HAZARD AND RISK ANALYSIS

This section identifies specific physical, chemical and biological hazards associated with work activities located in the RPs and the FA. Conditions which may pose hazards to personnel are identified and defined in this section. Adequate preventive measures will be presented to abate these hazards and ensure worker safety. All personnel must be observant and cautious in the performance of the tasks and develop a safety conscious attitude during the work on this project.

3.1 ACTIVITY HAZARD ANALYSIS

An Activity Hazard Analysis (AHA) will outline the steps for each activity of each job along with its possible hazards, risk evaluation, control measures, required equipment, training requirements and the personnel needed. The SSHO, or his designee, should use AHAs to provide instruction, insight, and to create communication between themselves and the site workers. AHAs for all tasks performed should be developed, and communicated with workers and kept on file for ready reference. As new tasks arise, the SSHO should assure that AHAs are developed or amended and communicated with workers. Approved AHAs are found in Appendix A of this document.

3.2 PHYSICAL HAZARDS

Activities performed during this project will present basic physical hazards typical to those of a construction area. Some of the basic physical hazards associated with activities during this project are: strains from lifting activities; hazards from walking and working surfaces (ditches, holes, and pits; uneven terrain; sharp objects; slippery surfaces; slips, trips, and falls), heat stress and cold exposure; excavation hazards; utility hazards; noise hazards; cuts; and heavy equipment hazards.

To minimize risk, all personnel must be constantly aware of these potential hazards and take the necessary precautions to avoid such hazards. Personnel shall exercise vigilance in all hazard recognition, to include the use of signs, signals, and barricades. Personnel training, increased awareness through daily safety meetings, proper use of PPE, and attention to conditions will serve to mitigate the potential hazards listed in this section. Further information regarding training, safety procedures, and PPE can be found within Sections 4 and 6.

At least two field personnel certified in first aid and Cardiopulmonary Resuscitation (CPR) and an appropriately equipped first aid kit will be available during all activities.

3.2.1 HEAVY EQUIPMENT HAZARDS

Working with heavy equipment can present a hazard in all project areas. Hazards associated with heavy equipment include: struck by; caught between or under; impacts from flying objects; noise; explosions; and overturning of vehicles. Vehicle and equipment operation will be in accordance with 29 CFR 1926.600-606, the EM 385-1-1 and any other applicable Occupational Safety and Health Administration (OSHA) regulations and standard safety practices. In particular, the following precautions will be utilized to help preclude injuries or accidents:

- ◆ Brakes, hydraulic lines, light signals, fire extinguishers, steering tires, horn, and other safety devices should be checked at the beginning of each day.
- ◆ Parking brakes shall be set before shutting off any vehicle.
- ◆ While a machine is in reverse, only personnel acting as a spotter will be to the rear of the machine.
- ◆ Hearing protection shall be worn by personnel working closely enough to an operation that it presents a noise hazard.
- ◆ Personnel operating a machine with a cab are not required to use hearing protection.
- ◆ Operator must be aware of location of workers in and around the excavation at all times.
- ◆ All personnel will stand away from equipment that is loading or unloading excavated material.
- ◆ Never move excavated material over or above workers.
- ◆ All personnel must stay clear of swing radius of the excavator.
- ◆ Do not allow workers to stand or walk under the elevated portion of the machine.
- ◆ Personnel and operators must establish contact, either visual or verbal, before moving equipment.

3.2.2 UTILITY HAZARDS

Utilities are expected to be encountered during project activities. All overhead lines will be identified and marked if deemed a hazard by the SSHO. Before any work is done around hazardous overhead lines, the SSHO will meet with personnel that may encounter them to review safe work procedures. Personnel are also expected to encounter underground utilities while excavating at RPs. The underground utilities which may present a hazard when excavating are: water lines, sewer lines, cable lines, high pressure utility lines, fiber-optic lines, and private utility lines. Private utilities may include: underground dog fences, private water lines, private power lines and private propane lines. The excavation contractor must contact JULIE (811) for location and marking of all public underground utilities. The excavation contractor may be required to contact a third-party locator for location and marking of private underground utilities.

If any high pressure lines are marked by a utility locating service, the owner of the line will be contacted. The SSHO will coordinate with the owner to ensure the safety of the utility line and personnel.

3.2.3 SLIPS, TRIPS AND FALLS

Due to the terrain and work activities associated with this project, the walking and working surfaces present slip, trip and fall hazards. Personnel should pay attention to their surroundings, be aware of uneven surfaces, and walk at a pace suitable for the surface to ensure good traction. Personnel must always use three points of contact when entering or exiting equipment. Personnel will use hand rails, if present, at project facilities or on machinery. Personnel shall clean up spills immediately and stay clear of wet or oily surfaces. The SSHO shall make all personnel aware of weather hazards (ice, mud and other wet or slick surfaces). All personnel should exercise caution when walking around project sites.

3.2.4 LIFTING TECHNIQUES

Lifting, or moving material and/or equipment improperly can place a great deal of stress on the back, potentially resulting in severe injury. Lifting objects is inherent in performing field activities, therefore, it is important to use good lifting techniques. When lifting loads squat down close to the load, get a firm grip, keep your back straight and lift slowly powering the lift with leg muscles not back muscles. Also, avoid walking backwards, twisting your body, changing your grip while holding the load or stepping over objects while moving. Whenever available, and always when necessary, use team lifting. When team lifting one person should take responsibility for giving the orders to lift, turn, and set down. Lift and lower in the same manner, move slowly and evenly, keep the load level and the weight evenly distributed and carry long loads on the same shoulder.

3.2.5 INCLEMENT WEATHER

The SSHO will be attentive to weather forecasts for the project area each morning. Predicted weather conditions with potential field impact are to be included in daily safety briefings. Work shall not be scheduled when inclement weather (heavy rains, strong winds, tornado, floods, extreme temperatures, etc.) is predicted that could cause or contribute to an accident or exposure incident. If a change in weather poses a health or environmental threat, work shall cease. Extremes in temperature can pose serious physical hazards to personnel. The SSHO shall make personnel aware of appropriate steps to be taken to minimize the effects of temperature extremes. Severe weather can occur with little warning. The SSHO shall constantly be aware of the potentials for storms, lightning, high winds, and flash flood events.

The following procedures will be implemented once thunder is heard or lightning spotted:

- If thunder is heard, all site personnel are to be alert to any visible lightning flashes.
- The SSHO will observe and track the storm front. The SSHO will continue to track the storm front until it passes or until the prevailing direction is determined to be away from the site.
- If lightning is observed, the PM or SSHO shall be notified. When the next lightning flash is observed, a “second” count shall be initiated from the time the lightning is observed until the thunder from the strike is heard.
- The following action guidelines shall be implemented once the “second” count is less than 30 seconds:
 - Count is more than 30 seconds - The PM or SSHO will continually observe the storm front. If the front is moving away, work will continue. If the front is moving towards the site, the PM will initially place workers on alert for potential evacuation.
 - Count less than 30 seconds - The PM will issue the evacuation command and all workers are to report to the break/lunch trailer. Work can be re-initiated once: the front has passed, lightning has not been seen and thunder has not been heard for 30 minutes or more.
- If lightning is observed and the storm front is moving away from or around the site and is more than 20 miles away, work will be permitted to continue. The location of the storm can be confirmed via internet access to a local weather website that has a Doppler radar tracking system.

3.2.5.1 COLD EXPOSURE

Project activities are expected to be conducted from spring through fall, therefore, the potential for cold exposure will be a limited concern. Thermal injury due to cold exposure may be experienced during limited days and early morning. The SSHO must constantly evaluate the potential for cold temperature related hazards to occur.

Each type of cold exposure is discussed in the following paragraphs:

Hypothermia

Hypothermia is defined as a decrease in the core temperature below 96°F. The body temperature is normally maintained by a combination of central (brain and spinal cord) and peripheral (skin and muscle) activity. Interference with any of these mechanisms can result in hypothermia, even in the absence of what normally is considered a "cold" ambient temperature. Symptoms of hypothermia include shivering, apathy, listlessness, sleepiness, and unconsciousness.

Frostbite

Frostbite is both a general and medical term given to areas of local cold injury. Unlike systemic hypothermia, frostbite rarely occurs unless the ambient temperatures are less than freezing and usually less than 20°F. Symptoms of frostbite are a sudden blanching or whitening of the skin; the skin has a waxy or white appearance and is firm to the touch; and tissues are cold, pale and solid.

Prevention of Cold Related Illness

To minimize the potential for cold exposure to occur, the following preventive measures will be undertaken on this project.

- ◆ Workers shall be educated to recognize the symptoms of hypothermia & frostbite.
- ◆ Known risk factors shall be identified and limited.
- ◆ The availability of an enclosed, heated environment on or adjacent to the site shall be provided.
- ◆ Dry clothes shall be provided, as required.
- ◆ The capability for temperature recording shall be available on-site
- ◆ Warm drinks shall be provided, as required.
- ◆ Workers shall be educated about additional protective equipment (i.e., insulated gloves, insulated boots, caps) to protect from exposure to cold temperatures.

Monitoring

Cold exposure monitoring shall be performed:

- ◆ When wind-chill is less than 20°F, or wind-chill is less than 30°F with precipitation.
- ◆ Monitoring will be initiated at the SSHO's discretion when suspicion is based on changes in a worker's performance or mental status or at the worker's request.
- ◆ Whenever one or more workers on the Site suffers a cold exposure related illness, monitoring will be initiated as a screening measure.

Employee exposure limit guidelines, as determined by NIOSH/OSHA/EPA protocols or the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) for Cold Stress, will be used to determine the work/rest regimen required during cold weather work.

3.2.5.2 HEAT STRESS

Project activities are expected to be conducted from spring through fall, therefore, heat stress is an expected concern. Wide variety in ambient temperature can be experienced during this time. The SSHO must constantly evaluate the potential for heat related hazards to occur. The use of PPE can also significantly increase these potential heat-related hazards.

Each type of heat stress response is discussed in the following paragraphs:

Heat Cramps

Heat cramps are muscular pains and spasms due to heavy exertion. They usually involve the lower abdominal muscles or legs. It is generally thought that loss of water, and possible salt loss from heavy sweating, leads to heat cramps.

Heat Exhaustion

Heat exhaustion typically occurs due to heavy exertion or work in warm, humid environments where bodily fluids are lost due to heavy sweating. Fluid loss leads to a decrease in blood flow to the vital organs, resulting in a form of shock. Heat exhaustion is less serious than heat stroke. The usual signs of heat exhaustion are; profuse sweating, dilated pupils, headache, nausea, dizziness, weakness, clammy skin, slurred speech, rapid pulse and a normal or lower than normal body temperature.

Heat Stroke

Heat stroke is a life-threatening condition resulting from the loss of the body's temperature control mechanism. In this condition, the body stops sweating and the body temperature can rapidly rise so that brain damage and death can result if immediate medical attention is not provided.

The signs of heat stroke are:

- ◆ Hot, red and dry skin
- ◆ Very high body temperature
- ◆ Progressive loss of consciousness
- ◆ Rapid weak pulse
- ◆ Fast shallow breathing
- ◆ Mental confusion and delirium

Prevention of Heat Related Illness:

To minimize the potential for heat stress to occur, the following preventive measures will be undertaken on this project:

- ◆ Workers shall be educated to recognize the symptoms of heat exhaustion, heat stress, and heat stroke.
- ◆ Known risk factors shall be identified and limited.
- ◆ The availability of shaded and/or cooled areas on or adjacent to the site shall be provided.
- ◆ The availability of cool drinks and liquids to replenish body fluids shall be assured.

Monitoring

Heat stress monitoring shall be initiated at the job site when:

- ◆ Personnel are working in impervious clothing and the ambient air temperature exceeds 90°F. Heat stress monitoring will be initiated utilizing the NIOSH/OSHA/EPA protocols for prevention of heat stress. Personnel in non-impervious clothing shall be monitored in accordance with the latest edition of the ACGIH TLV for heat stress.
- ◆ At the SSHO's discretion when suspicion is based on changes in a worker's performance or mental status.
- ◆ At the worker's request.
- ◆ As a screening measure, whenever one or more workers on the site suffer a heat related illness.

Employee exposure limit guidelines, as determined by NIOSH/OSHA/EPA protocols or the ACGIH TLV for Heat Stress, will be used to determine the work/rest regimen required during hot weather work.

3.2.6 NOISE HAZARDS

Noise hazards are expected to be present during these project activities. Hearing protection is mandatory when working in areas where the noise levels exceed 85-dBA steady state or 120-dBA impulse. Hearing protection will be made available to all personnel by the SSHO. See Noise Control Plan (EPP, Attachment 10).

3.2.7 EXCAVATION HAZARDS

Excavation hazards will be present during this project such as slips, trips and falls, caught in between, struck by and falling overhead objects. No excavations for this project will exceed 30 inches in depth. Excavations will not need to be shored, sloped, or benched per 29 CFR 1926.652. Personnel must exercise caution when working or walking in and/or around excavations.

3.2.8 CUTS

Materials with sharp edges are likely to be encountered and may pose a potential cutting hazard. The FA will have cut hazards associated with hand tools, heavy equipment, and terrain. The RPs will have cut hazards associated with hand tools, heavy equipment, fencing, fence post installation and removal, and vegetation. Preventative measures shall be taken to prevent cuts and scrapes. Personnel shall wear appropriate PPE to prevent potential cuts whenever possible.

A first aid kit conforming to USACE EM 385-1-1 (Table 3.1) will be available on-site in the event personnel are cut. The cut areas will be decontaminated and first aid rendered. At the discretion of the SSHO, if the cut is severe enough, the affected worker will be taken to the hospital for evaluation.

3.2.9 FIRE AND EXPLOSION HAZARDS

Fire and explosion hazards are expected on this project. The on-site fueling and maintenance of equipment will present fire hazards and an explosion hazard. All sources of ignition shall be prohibited in areas where flammable and combustible liquids are stored, handled, and processed. Suitable NO SMOKING OR OPEN FLAME signs shall be posted in all such areas. Each service or refueling area shall be provided with at least one fire extinguisher rated not less than 40-B:C and located so that an extinguisher shall be within 100 ft of each pump or dispenser. Flammable liquids shall be kept in closed containers or tanks when not in use. Fuel tanks on-site will be contained by a berm and tanks will be grounded.

3.2.10 DRILLING

During sampling events, a tracked geo probe sampler and split spoon sampler may be used to accomplish this task. The following precautions will be utilized to help preclude injuries or accidents during drilling operations.

- ◆ Only authorized personnel are permitted to operate drill rigs.
- ◆ Stay clear of areas surrounding drill rigs during every startup.
- ◆ Stay clear of the rotating augers and other rotating components of drill rigs.
- ◆ Stay clear of all hoisting operations. Loads shall not be hoisted overhead of personnel.
- ◆ Do not wear loose-fitting clothing or other items, such as rings or watches, that could get caught in moving parts. Long hair should be restrained.
- ◆ If equipment becomes electrically energized, personnel shall be instructed not to touch any part of the equipment or attempt to touch any individual who may be in contact with the electrical current. The utility company or appropriate party shall be contacted to de-energize the line prior to approaching the equipment.
- ◆ Smoking around drilling operations is prohibited.

3.3 BIOLOGICAL HAZARDS

Biological hazards may be present at certain times during these project activities. Prevention and minimization of biological hazards can be accomplished using protective equipment and standard safety precautions. Proper PPE shall be worn in areas where harmful plants, animals, and insects are likely to present a problem. Boots, gloves, and long-sleeved clothing can minimize the potential for injury. Familiarization with the habitat and behavior of these species will also aid in the anticipation and avoidance of biological hazards.

Project activities conducted in the vicinity of small mammals have inherent risks. The risks increase when there is possibility of direct contact with a wild animal. Personnel shall not attempt to touch, or interact with, wild animals on the project sites. Personnel must make no attempt to feed and/or take care of any animal.

Some animals have the ability to inject venom. These include various types of spiders and snakes. If bitten by any of these, special care should be taken to treat the wound as it may lead to complications due to the toxin. A bite from a venomous snake or spider, should always be considered a medical emergency. All other bites should be reported, proper first aid implemented, and the wound progression tracked.

Sensitivity to toxins generated by plants, insects and animals varies according to dosage and the ability of the victim to process the toxin, therefore it is difficult to predict whether a reaction will occur, or how severe the reaction will be. Staff should be aware that there are a large number of organisms capable of causing serious irritations and allergic reactions. Plants that field staff should recognize and take precautions to avoid include: Poison Sumac, Poison Ivy and Poison Oak. Personnel shall not ingest berries or plants found at project sites.

Precautionary measures should be taken for insects including: mosquitoes, black flies, wasps, bees, and ticks. Precautions, such as avoiding high brush, wearing light colored clothing, and application of a repellent such as DEET, or others containing Permethrin, are recommended.

Workers performing fieldwork may be susceptible to sunburn if not properly protected with sunscreen or protective clothing and hats. Skin can burn in minutes when the UV Index is elevated. Protective measures, such as the use of long-sleeved, loose fitting clothing, wide-brimmed hard hats, and the application of sun block (minimum SPF 30) are recommended. The SSHO will provide personnel with necessary guidance to avoid hazards.

3.4 CHEMICAL HAZARDS

Chemical hazards are expected on this project. The project tasks involving excavation and earthwork will present a chemical hazard for workers involved. The soil is known to be contaminated with hazardous heavy metals. Hazard awareness training will be mandatory for all on-site personnel prior to performing work. ARDL will implement the Air Monitoring Plan found in Appendix B.

Refer to Table 3.1 for a summary of the potential chemical hazards during project activities and these chemicals corresponding action levels.

3.4.1 RADIATION HAZARDS

Radiation hazards are expected to be minimal during these Site activities. The Niton XL3 XRF model employed for this project contains an X-ray tube which emits radiation only when the user turns the X-Ray tube on. The allowable limit for occupational exposure in the US is 5,000 mrem/year. Exposure from a properly operated Niton XL3 analyzer should be less than 200 mrem/year, even if the analyzer is used as much as 2,000 hours/year with the shutter open continuously (Niton XL3 Analyzer User's Guide Ver. 8.0). All XRF operators will be required to complete radiation safety and operation training class. Operators may also be monitored by use of radiation dosimetry devices. There will be an AHA prepared for use of the XRF. If conditions are encountered where the potential for other sources of radiation is suspected (i.e., radioactive placarded equipment or containers), all project activities will cease. All ARDL project management, USEPA, IEPA and USACE personnel associated with project must be contacted immediately for further guidance.

3.5 ACCIDENT PREVENTION

ARDL is committed to ensure the safety of employees, subcontractors, and visitors. The company believes that occupational injuries and illnesses can be prevented, that exposures to hazardous materials and hazardous work situations can be controlled, and that prevention of injuries and illnesses are equal in importance to production, quality, cost, and morale. For this reason, ARDL has established this comprehensive SSHP which includes requirements such as: Site specific training; Daily Safety meetings, AHAs for all activities to be performed on this project, and a review of safety concerns and associated AHAs before starting new activities.

Table 3.1 - Potential Chemical Hazards

<u>Contaminant</u>	<u>Exposure Limits</u>	<u>Route of Exposure</u>	<u>Target Organs</u>
Arsenic	NIOSH REL: Ca C 0.002 mg/m ³ (15-minute) OSHA PEL: TWA 0.010 mg/m ³	Inhalation, Absorption, Contact, Ingestion	Liver, Kidneys, Skin, Lungs, Lymphatic System Cancer Site
Cadmium	NIOSH REL: Ca (Undetermined use OSHA PEL) OSHA PEL: 0.005mg/m ³	Inhalation, Ingestion	Respiratory System, Kidneys, Prostate, Blood Cancer Site
Lead	NIOSH REL: TWA (8-hour) 0.050mg/m ³ OSHA PEL 0.050mg/m ³	Inhalation, Ingestion, Contact	Eyes, GI tract, CNS, Kidneys, Blood, Gingival Tissue
Zinc	NIOSH REL: TWA 5 mg/m ³ C 15 mg/m ³ OSHA PEL: TWA 5 mg/m ³	Inhalation	Respiratory System

Exposure Limits – Time weighted average (TWA) indicates a TWA concentration for up to a 10-hour workday during a 40-hour workweek. Short term exposure limit (STEL) is a 15-minute TWA exposure that should not be exceeded at any time during the workday. A ceiling recommended exposure limit (C) should not be exceeded at any time. Any potential occupational carcinogen shall be designated by the notation “Ca”.

References - NIOSH Pocket Guide to Chemical Hazards, September 2010, OSHA 29 CFR Part 1910 General Industry Regulations

4.0 CONTRACTOR PROJECT ORGANIZATION AND TRAINING

4.1 PROJECT ORGANIZATION

The management organization for this project is designed to provide a line of functional responsibility and authority in all areas of health and safety. The project organizational structure is supported by a management control structure and health and safety planning. The management planning structure is designed to provide for all communications, coordination, and project monitoring of all technical aspects of health and safety compliance. Below is a list, including a brief description, of project personnel. For more information referring to the construction contract project organization, please refer to Figure 2.

- A. Federal Government Technical POC** - This is the technical POC representing the USEPA who will serve as a liaison between the USEPA and IEPA, and as liaison between the USEPA and USACE.

USEPA POC	Phone Number
Sheila Desai	Cellular (312) 353-4150

- B. State Government Technical POC** - This is the technical POC representing the IEPA who will serve as a liaison between the IEPA and the contractor.

IEPA POC	Phone Number
Michael Haggitt	Office (217) 558-1989

- C. Government Construction POC** - This is the Construction POC representing the USACE who will serve as a liaison between the USACE and the contractor.

USACE POC	Phone Number
John Rossi	Office (314) 331-8631
	Cellular (314) 378-0480

- D. Government POC** - This is the POC representing the USACE who will serve as a liaison between the USACE and the contractor.

USACE POC	Phone Number
Pedro Rosario González	Office (314) 925-5100
	Cellular (314) 250-5603

- E. Corporate Safety Consultant** – The Corporate Safety Consultant provides overall safety oversight and provides a corporate level of safety for the project.

Corporate Safety Consultant	Phone Number	
Robert Jurgiel	Office	(636) 757-3060
	Cellular	(314) 280-6035

- F. Senior Program Manager (SPM)** – ARDL's Senior Program Manager provides technical insight and provides corporate level supervision for the project. The Program Manager has overall responsibility to see that the project is completed in accordance with the SOW.

ARDL SPM	Phone Number	
Rob Dismang	Office	(618) 244-3235
	Cellular	(618) 231-3740

- G. ARDL Project Manager/Superintendent (PM/S)** - The PM/S will oversee and has the overall responsibility for all on-site field activities. The superintendent has the authority to stop work when deemed necessary.

ARDL PM/S	Phone Number	
Mitchell Jenkins	Office	(618) 244-3235
	Cellular	(618) 316-8114

- H. ARDL SSHO** - SSHO is responsible for safety in all work and the implementation of the SSHP. The SSHO will have the authority to shut down any operation that jeopardizes the health and safety of site personnel, the environment, or the local community.

ARDL SSHO	Phone Number	
Chris Creps	Office	(618) 244-3235
	Cellular	(618) 731-2044

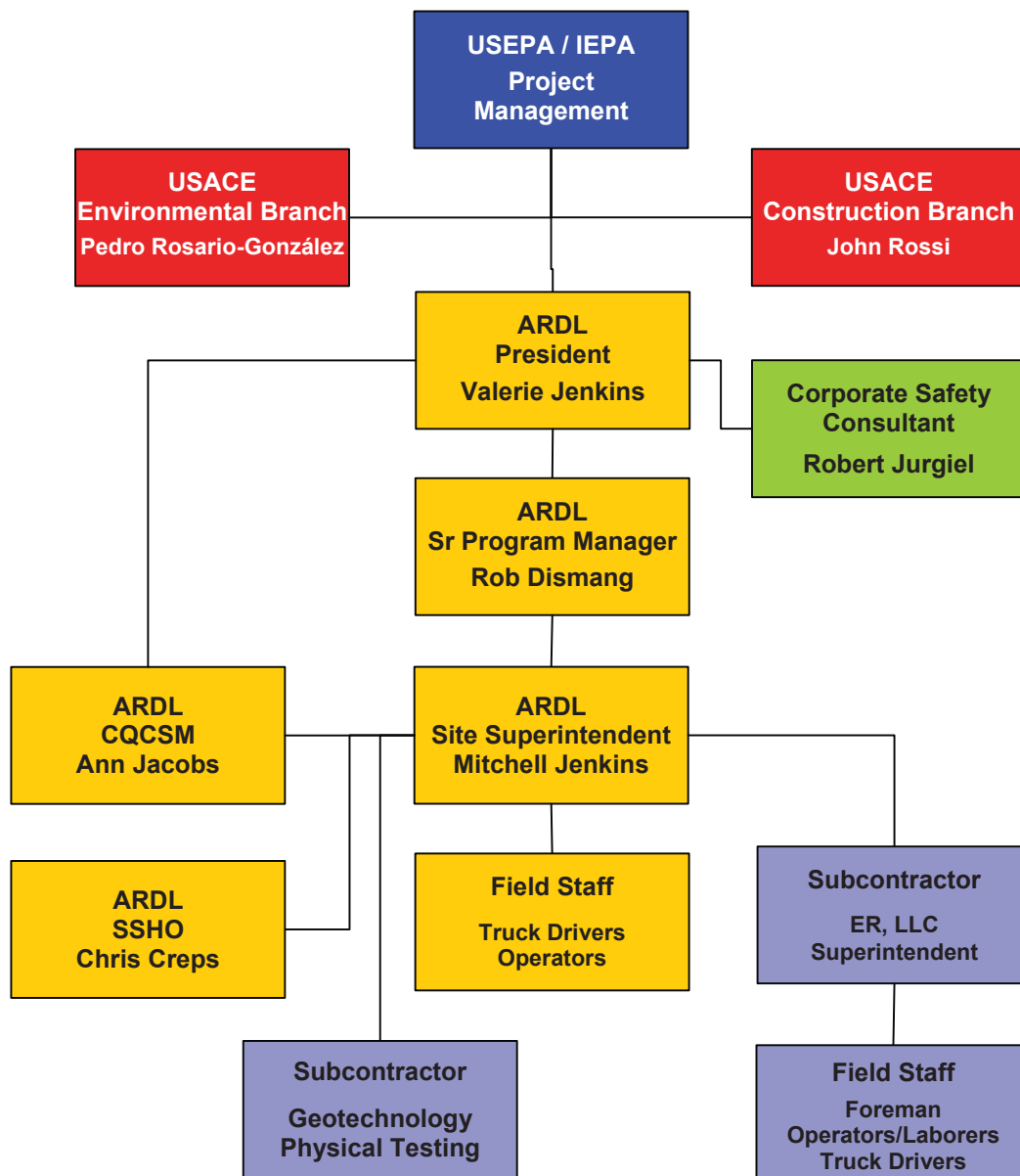
- I. Construction Quality Control Systems Manager (CQCSM)** - As CQCSM this person shall be responsible for all QC activities. This person has the authority to stop work if QC is not being met.

ARDL CQCSM	Phone Number	
Ann Jacobs	Office	(618) 244-3235
	Cellular	(314) 323-8959

4.1.1 LINES OF AUTHORITY

Figure 2 illustrates the lines of authority for the personnel responsible for project safety.

Figure 2 - Site Safety Organization



4.2 TRAINING

All personnel involved in planning and overseeing the field work on the project will have successfully completed a minimum of 40 hours of off-site health and safety instruction as well as the applicable on-site training requirements for hazardous waste operations required in 29 CFR 1910.120. At least two personnel on-site will have received first aid and CPR training. For more information regarding training, please refer to Appendix C.

4.2.1 MINIMUM TRAINING STANDARDS

The 40-hour HAZWOPER General Site Worker Course, should, as a minimum, address the following major topics.

1. Introduction to Hazardous Materials
2. Toxicology
3. Flammables
4. Corrosives
5. Reactivity
6. Respirators (Fit Testing, Selection, Limitations, etc.)
7. Personal Protective Clothing
8. EPA's Levels of Protection
9. Hands-on Usage of all Protective Equipment and Respirators
10. Hazard Classification (DOT, EPA, NFPA, OSHA)
11. Site Assessment & Layout: (Support Zone, Contamination Reduction Zone, Exclusion Zone)
12. Contingency Plan
13. Site Safety Plans
14. Traffic Control
15. Container Management
16. Decontamination Procedures
17. Technical Equipment:
 1. Combustible Gas Indicators
 2. Oxygen Meters
 3. Detector Tube Systems
 4. HNu
 5. Organic Vapor Analyzers
18. Personal Sample Equipment:
 1. Passive Dosimeters
 2. Personal Sample Pumps
19. Health Monitoring/Heat Stress
20. Pre & Post Spill Responsibilities
21. Confined Work Space Practices
22. Hands-on Spill Simulation

In addition to the 40-hour course, site workers shall also receive an initial site-specific training program which may include the following topics:

- ◆ Site Specific Hazards;
- ◆ Elements of the Health and Safety Plan (HASP);
- ◆ Medical Surveillance - Requirements, Records and Employee Notification. (29 CFR 1910.20, 120, 134 and 1926.65);
- ◆ Respirators - Refresher and Re-fit Test;
- ◆ First Aid/CPR;
- ◆ Hazardous Materials Manifesting, Labeling, Placarding;
- ◆ Hands-on Training on Response Equipment;
- ◆ PPE;
- ◆ Sampling Procedures;
- ◆ QA/QC Procedures.

Daily health and safety meetings will be held with all field team members performing field activities that day in attendance. The daily meeting will, at a minimum, cover the following information:

- ◆ Names of personnel present with first aid and CPR certification;
- ◆ Physical and chemical hazards specific to that day's activities;
- ◆ Safe use of engineering controls and equipment specific to that day's activities;
- ◆ Use of PPE for that day's activities;
- ◆ Climatological/meteorological forecast for the day;
- ◆ Review of Emergency Response Procedures.

The project health and safety file will contain copies of training certification, HASP acceptance forms for all field team members, and minutes and attendance logs from the project health and safety orientation and daily meetings.

All site visitors will be provided with site specific training by the SSHO prior to entry into the site. Site specific training will encompass general site hazards, site specific PPE, work zones, and emergency procedures. No visitors will be allowed into any exclusion zone unless the requisite 40-hour training has been completed or escorted by project personnel.

Training certifications for the management personnel on this project can be found in Appendix C of this SSHP or its appendices, and on file on-site.

4.2.2 SITE SPECIFIC TRAINING

All project personnel must attend mandatory training before beginning any work activities. This training may include: Training and guidance concerning this SSHP and appendices; Lead awareness program; and Specific training in regard to activities, procedures, equipment, and hazards for project operations. All training will allow personnel to ask questions, clarify misunderstandings, and reinforce their previous safety and health training.

The ARDL lead awareness program can be found in Appendix E.

5.0 MEDICAL SURVEILLANCE

5.1 MEDICAL EXAMINATION

All on-site project personnel shall have completed a comprehensive medical examination within the past 12 months that meets the requirements of OSHA Regulation 29 CFR 1910.120.

The annual exam may include the following elements:

- Medical and occupational history questionnaire
- Physical examination
- Complete blood count, with differential (heavy metals)
- Liver enzyme profile
- Chest X-ray, once every three years, for non-asbestos workers
- Pulmonary function test
- Audiogram
- Visual acuity
- Follow-up examinations, at the discretion of the examining physician or the corporate medical director.

The examining physician provides the employee with a letter summarizing his findings and recommendations. The examining physician also provides the employer with a letter confirming the worker's fitness for work and ability to wear a respirator. A copy of this letter, for all project workers, will be kept on site in the office trailer of the SSHO during all project site work.

Project personnel medical records are maintained by the SSHO in the project facilities on the FA. Each employee also has the right to inspect and copy his medical records.

Subcontractors will certify that all their employees have successfully completed a physical examination by a qualified physician. The physical examinations shall meet the requirements of 29 CFR 1910.120 and 29 CFR 1910.134. Subcontractors will supply copies of the medical examination certificate for each on-site employee.

5.2 PLACEMENT EXAMINATION

All employees will receive a placement medical examination prior to assignment to field operations.

5.3 ANNUAL EXAMINATION

Each year, subsequent to the placement examination, all employees must undergo an annual examination, similar in scope to the placement examination. The medical and occupational history is updated with each examination.

5.4 EXIT EXAMINATION

All employees shall receive an exit examination upon leaving the company if they have not been examined within the previous year. The exit examination consists of the annual examination without drug screen. The SSHO is to notify the PM/S within a reasonable time before the termination to allow for the necessary arrangements.

5.5 MEDICAL RECORDS

Medical and personal exposure monitoring records will be maintained per the requirements of 29 CFR 1910.20, and shall be kept for 30 years, post-employment. Employee confidentiality shall be maintained. Employees and their authorized representatives shall have access to these records.

6.0 SAFETY PROCEDURES/PPE PROGRAM

6.1 SAFETY EQUIPMENT

There shall be fire extinguishers in all equipment, in all project vehicles and at the FA. An American National Standards Institute/International Safety Equipment Association (ANSI/ISEA) Z308.1 approved portable eyewash station will be located at the RP and FA. First aid kits will be located in all project vehicles and trailers. Authorized personnel shall perform routine checks to assure that the safety equipment is present and in good working condition.

6.2 EXPOSURE INCIDENCE REPORTING

Any project worker who suspects they may have been exposed to hazardous or toxic substances shall report the incident to their supervisor orally, and in writing as soon as possible. The SSHO shall ensure that appropriate actions are taken with respect to medical facilities and emergency procedures. The SSHO will file a report within two days describing all incidents relating to the exposure and the findings and recommendations of the examining physician. This report will be forwarded to representatives from the USEPA and USACE. Copies will also be sent to appropriate

medical consultants for immediate review. Following review of all pertinent records, the SSO, in conjunction with the medical advisors may place restrictions or limitations on the employee. The employee's supervisor will be notified immediately concerning the incident.

Additionally, all applicable measures, in accordance with EM-385-1-1, Section 2, will be followed in the event of an accident or incident. An Accident Report ENG 3394, in accordance with AR 385-40 and the USACE supplements to that regulation, shall also be filed within the two (2) days.

The project health and safety file will contain copies of medical certification and any exposure incidents for all the field team members working at this project.

6.3 PERSONAL PROTECTIVE EQUIPMENT

Personnel must wear PPE when: performing work activities at the FA and RPs, response activities involving known or suspected atmospheric contamination; site activities that may result in vapors, gases, or particulates being generated, or; any direct contact with skin-affecting substances. Full face piece respirators protect lungs, gastrointestinal tract, and eyes against airborne toxicants. Chemical resistant clothing protects the skin from contact with skin-destructive and absorbable chemicals. PPE requirements will conform to 29 CFR 1910.132 and any other applicable OSHA requirements.

The specific levels of protection and necessary components for each have been divided into four categories:

- ◆ Level A: Should be worn when the highest level of respiratory, skin, and eye protection is needed;
- ◆ Level B: Should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection. Level B is the primary level of choice when encountering unknown environments;
- ◆ Level C: Should be worn when the criteria for using air-purifying respirators are met, and a lesser level of skin protection is needed; and
- ◆ Level D: Should be worn only as a work uniform and not in any area with respiratory or skin hazards. It provides minimal protection against chemical hazards.

Modifications of these levels are permitted, and routinely employed during site work activities to maximize efficiency. For example, Level C respiratory protection and Level D skin protection may be required for a given task. Likewise, the type of chemical protective ensemble (i.e., material, format) will depend upon contaminants and degrees of contact.

The Level of Protection selected is based upon the following:

- ◆ Type and measured concentration of the chemical substance in the ambient atmosphere and its toxicity;
- ◆ Potential for exposure to substances in air, liquids, or other direct contact with material due to work being done; and
- ◆ Knowledge of chemicals on-site along with properties such as toxicity, route of exposure, and contaminant matrix.

In situations where the types of chemical, concentration, and possibilities of contact are not known, the appropriate Level of Protection must be selected based on professional experience.

The protection level for this project is based on the expected potential for exposure to the on-site contaminants and the nature of the work, as well as the professional judgment of the SSHO. For this project, Modified Level D will be required for all project activities.

The Modified Level D PPE includes:

- | | |
|------------------|------------------------------------|
| ◆ Hard hat | ◆ High Visibility vests |
| ◆ Safety glasses | ◆ Gloves |
| ◆ Safety boots | ◆ Hearing protection (when needed) |

Table 6.1 presents the Level of Protection planned for the completion of individual task assignments on the project.

The Level of Protection provided by PPE selection shall be upgraded or downgraded based upon a change in site conditions or findings of site investigations. Whenever a significant change in site activities or SOW occurs, the hazards should be reassessed, and applicable PPE ensembles adjusted as necessary. Some indicators of the need for reassessment are:

- ◆ Change in job tasks during a work phase;
- ◆ Change of season/weather;
- ◆ When temperature extremes or individual medical considerations limit the effectiveness of PPE;
- ◆ Contaminants other than those previously identified are encountered;
- ◆ Change in ambient levels of contaminants;
- ◆ Change in work scope that effects the degree of contact with contaminants.

Table 6.1 - Specific Levels of Protection Planned for Task Assignments

LEVEL A Tasks/LEVEL A Tasks (modified)

None

LEVEL B Tasks/LEVEL B Tasks (modified)

None

LEVEL C Tasks/LEVEL C Tasks (modified)

None

LEVEL D Tasks/LEVEL D Tasks (modified)

All features of work to be accomplished on this project

Before the workers begin work in their PPE ensembles, the anticipated duration of the work mission should be established. Several factors limit mission length, including:

- ◆ Suit/Ensemble permeation and penetration rates for chemicals;
- ◆ Ambient temperature and weather conditions (heat stress/cold stress);
- ◆ Capacity of personnel to work in PPE.

A basic PPE inspection checklist can be found in Table 6.2.

Table 6.2 - Basic PPE Inspection Checklists

CLOTHING

Before use:

- ◆ Determine that the clothing material is correct for the specified task at hand.
- ◆ Visually inspect for:
 - imperfect seams
 - non-uniform coatings
 - tears
 - malfunctioning closures
- ◆ Hold up to light and check for pinholes.
- ◆ Flex product:
 - observe for cracks
 - observe for other signs of shelf deterioration
- ◆ If the product has been used previously, inspect inside and out for signs of chemical attack:
 - discoloration
 - swelling
 - stiffness

During the work task:

- ◆ Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.
- ◆ Closure failure.
- ◆ Tears.
- ◆ Punctures.
- ◆ Seam Discontinuities.

GLOVES

Before use:

- ◆ Visually inspect for:
 - imperfect seams
 - tears
 - non-uniform coating
 - pressurize glove with air; listen for pin-hole leaks

Table 6.2 - Basic PPE Inspection Checklists (cont'd)

SUPPLIED AIR RESPIRATORS

Inspect SARs:

- ◆ daily, when in use;
- ◆ at least monthly, when in storage, and;
- ◆ every time they are cleaned.

Prior to use:

- ◆ Inspect air lines prior to each use for cracks, kinks, cuts, frays, and weak areas;
- ◆ check for proper setting and operation of regulators and valves, according to the manufacturer's recommendations;
- ◆ check all connections for tightness.

Check material conditions for:

- ◆ signs of pliability;
- ◆ signs of deterioration;
- ◆ signs of distortion.

Check face piece and lens for:

- ◆ cracks;
- ◆ crazing;
- ◆ fogginess.

AIR PURIFYING RESPIRATORS

Inspect air purifying respirators:

- ◆ before use to be sure they have been adequately cleaned;
- ◆ after each use;
- ◆ during cleaning;
- ◆ monthly if in storage for emergency use.

Check material conditions for:

- ◆ signs of pliability;
- ◆ signs of deterioration;
- ◆ signs of distortion.

Examine cartridges and canisters to ensure that:

- ◆ they are the proper type for the intended use;
- ◆ the expiration date has not been passed;
- ◆ they have not been opened or previously used.

Check face piece and lens for:

- ◆ cracks;
- ◆ crazing;
- ◆ fogginess.

6.3.1 RESPIRATORY PROTECTION

Modified Level D PPE will be used for this project. However, if site conditions change, upgrading the level of PPE to a Modified Level C maybe required. In addition, any employee may request the use of respiratory protection, even if site conditions do not warrant its use. Respiratory equipment, if required, shall conform to 29 CFR 1910.134 and any other applicable OSHA regulations. The following specific procedures will be followed:

- ◆ Air purifying cartridges shall be replaced daily, or more frequently, if breakthrough or load-up occurs;
- ◆ Only employees who have pre-issue qualitative fit tests and annual fit tests thereafter shall be allowed to work in atmospheres where respirators are required;
- ◆ Should the employee experience discomfort while utilizing a half face APR, employees shall be allowed to upgrade to full face piece APRs at the employee's request;
- ◆ No employees shall be assigned to tasks requiring the use of respirators if, based on the most recent examination, a physician determines that the employee will be unable to function normally wearing a respirator or that the health and safety of the employee or other employees will be impaired by use of a respirator;
- ◆ If a physical examination yields no medical reason, but an employee has demonstrated difficulty in breathing during the fit test or during use, he or she shall be evaluated to determine whether the employee can perform the required duty;
- ◆ The employee shall be permitted to change cartridges whenever an increase in breathing resistance is detected;
- ◆ Beards and other facial obstruction which prevent a seal between the face and respirator will not be allowed;
- ◆ Each respirator face piece shall be individually assigned and not interchanged between workers without cleaning and sanitizing. Contact lenses are not to be worn with respirators;
- ◆ Procedures have been established for ensuring daily cleaning and maintenance of respiratory protection equipment. The manufacturer's recommended guidelines must also be adhered to during such procedures;
- ◆ Subcontractor employees are required to use their own respiratory protection equipment, in accordance with the provisions of this plan, supplied by their employer.

The following information is provided for personnel using respirators.

Fitting a Respirator

Any respirator that does not fit properly can allow contaminants to slip through cracks between the face piece and the skin. The negative-pressure and the positive-pressure fit tests shall always be performed just before entering any hazardous atmosphere.

To perform the negative-pressure fit test:

- ◆ Place your palms over the inhalation inlets.
- ◆ Inhale gently so the face piece collapses slightly.
- ◆ Hold your breath for about 10 seconds.
- ◆ If the face piece holds the suction inside and no leaks are felt, the respirator fits well.

To perform the positive-pressure fit test:

- ◆ Block off the exhalation valve.
- ◆ Blow outward gently and hold for about 10 seconds.
- ◆ If the positive pressure is maintained and no leaking is felt, the respirator fits well.

Respirator Inspection

Personnel shall inspect their respirator before and after each use. Personnel shall inspect for:

- ◆ Holes in filters
- ◆ Loss of elasticity or tears in straps and hoses
- ◆ Broken or loose connectors and fittings
- ◆ Cracks or scratches on the face piece
- ◆ Detergent residue or dirt on valves
- ◆ General Cleanliness

Respirator Cleaning and Storage

Personnel shall clean and disinfect their respirator after each use. The following is an acceptable cleaning procedure:

- ◆ Remove filters, screens, and headbands
- ◆ Scrub the respirator in detergent and warm water
- ◆ Rinse the respirator and treat it with disinfectant
- ◆ Rinse the respirator again, making sure to remove all detergent and disinfectant
- ◆ Air-dry the respirator
- ◆ Do not dry rubber parts under heat or sunlight
- ◆ Never use solvents to clean plastic or rubber
- ◆ Respirators must be stored away from dust, sunlight, heat, cold, moisture, and chemicals
- ◆ Respirators shall be placed in individual plastic bags and sealed

6.4 SAFETY MEETINGS

Safety meetings are to be conducted at least daily for all personnel. Field personnel should be briefed prior to daily operations, and on an as needed basis. Before starting a new feature of work a preparatory meeting will be held by the CQCSM for all personnel. Topics discussed will be safety related items of the new feature and any associated AHAs. Additional meetings will be held if a deficiency has been found, site conditions change, or when work practices change. The management personnel conducting the meeting shall record the following information on a Daily Safety Meeting form:

- ◆ All personnel attending the meeting
- ◆ The date of the meeting
- ◆ Topics discussed in the meeting
- ◆ Personnel comments, notes concerning the meeting
- ◆ Any safety related incidents noticed by personnel or management

6.5 CPR AND FIRST AID

Certain management personnel have received first aid and CPR training. Copies of first aid and CPR certifications will be in the SSHP and its appendices at the FA site. At a minimum, two management personnel with CPR and first aid certifications will always be at the FA. On-site personnel shall be informed of those who are CPR and first aid certified.

7.0 SITE CONTROL MEASURES

Site control is an essential component in the implementation of the SSHP. Personnel shall isolate the work area to prevent public access. ARDL will utilize orange safety fence, unless the RP has an existing fence that would suffice as a control measure. Any control measures removed during working hours, shall be replaced before exiting area. The FA has an existing chain link fence with two access gates. Limited access to the FA will be available and monitored. To prevent unauthorized entry, the access gates to the FA will be locked during non-working hours.

7.1 ILLUMINATION

No site activity will be conducted after dark (i.e., one hour after local sunset). Site illumination during working hours will be maintained in accordance with 29 CFR 1926.56 Table D-3 and all other applicable OSHA regulations.

7.2 SANITATION

Site sanitation procedures shall be maintained in accordance with 29 CFR 1926.51, 1910.120 and all other applicable OSHA regulations. ARDL and the Owner's Representative will each have their own office trailer at the FA. Sanitary requirements for water and toilet facilities will be provided. Potable water will be properly labeled, and disposable cups will be available for personnel use. A receptacle for disposal of cups shall be available.

7.3 SITE CONTROL ZONES

There are two (2) general site control zones established at this site. The Exclusion Zone (XZ) is defined as the area where contamination is either known, likely to be present, or, because of activity, will provide a potential to cause harm to personnel. Entry into, and any activities in the XZ, will require the use of PPE. The Work Zone (WZ) describes all project areas not included in the XZ. PPE may not be required in the WZ as the chance to encounter hazardous materials or conditions is minimal.

There will be an XZ and a WZ at both the FA and the RP. The XZ is the area to be excavated and encompasses everywhere contamination is present. The WZ includes adjacent areas where contamination has not been identified.

7.3.1 EXCLUSION ZONE

The XZ is the location where soil sampling and excavation activities will occur. Personnel in this area are required to wear proper PPE which is modified Level D. Entry into this area will be restricted to persons with the proper training, medical surveillance, and PPE. The SSHO, or his designee, will be charged with preventing unauthorized personnel from entering the exclusion zone.

7.3.2 WORK ZONE

A WZ will be established for all project tasks. A visible barrier, such as high-visibility construction fencing, will be placed around each work zone to prevent accidental entry. Existing barriers, if in place, may suffice in preventing accidental entry. The FA will have chain link fencing around the site. RPs may have existing fencing as well. If no barrier exists, high visibility fencing will be installed. Signage will also be posted at the properties during earthwork activities with contact information for the contractor in case of question of concerns.

7.3.2.1 STANDARD ORDERS FOR WORK ZONE

All field activities will be performed using the level of protection described in Section 6.3. The following list summarizes the standing orders for the WZ established on this project.

<u>Standing Orders for the Work Zone</u>
No smoking, eating, or drinking in this zone.
No horse play.
No matches or lighters in this zone.
Implement the communications system.
Line of sight must be in position.

Wear the appropriate level of protection as defined in the SSHP and its appendices.

7.4 BUDDY SYSTEM

When conditions present a risk to personnel, the implementation of the buddy system is mandatory. A buddy system requires that at least two people work as a team; each looking out for the other. People using the buddy system are required to use the same level of PPE. All emergency site activities require the use of the buddy system.

7.5 SITE COMMUNICATION PLAN

Successful communications between management personnel and support personnel is essential. The following hand signals shall be used during field activities at the site:

<u>Signal</u>	<u>Definition</u>
Hands clutching throat	Out of air / cannot breathe
Hands on top of head	Need assistance
Thumbs up	OK / I am all right / I understand
Thumbs down	No / negative
Arms waving upright	Send backup support to work area

Personnel will remain in the predetermined safe meeting area until the SSHO or his designee provides them with further instruction.

8.0 DECONTAMINATION PROCEDURES

The following sections outline the decontamination procedures to be followed for the on-site tasks and activities.

8.1 DECONTAMINATION STANDARD OPERATING PROCEDURES

Decontamination procedures involve the orderly, controlled removal of contaminants. Decontamination generally requires the physical removal of gross contamination, followed by spraying and rinsing with water to remove the balance of the contaminants. All personnel should minimize contact with contaminants in order to minimize the need for extensive decontamination. All decontamination water shall be collected and used for dust suppression at the FA, as discussed in the Fugitive Dust Control Plan (EPP, Attachment 7).

8.2 PERSONNEL DECONTAMINATION

Site activities will be conducted in Modified Level D. Therefore, the level of protection required for decontamination activities will also be Level D, at a minimum. It is not anticipated that extensive decontamination of personnel will be required, due to the nature of the Site activities. Decontamination activities for this project will occur in the WZ. The standard decontamination procedure for Level D is specified below:

Level D Decontamination Steps

Equipment drop onto plastic sheet
 Remove or decontaminate outer boot covers, if used
 Decontaminate boots, as required
 Decontaminate equipment, as required
 Remove outer garments (i.e., coveralls)
 Remove gloves
 Wash hands and face

The SSHO, or his designee, is responsible for requiring and monitoring, when necessary, decontamination procedures and determining their effectiveness.

8.3 EQUIPMENT DECONTAMINATION

Wet decontamination will be performed on the decontamination pad, located at the FA. Truck tires will be decontaminated before exiting the FA when needed. All equipment will be decontaminated before being demobilized from the project. All equipment for backfill activities will be decontaminated unless dedicated separate excavation and backfill equipment are used.

9.0 **EMERGENCY RESPONSE AND CONTINGENCY PLAN**

This section describes contingencies and emergency planning procedures to be implemented for this project. This plan is compatible with local, state, and federal disaster and emergency management plans, as appropriate.

9.1 **PRE-EMERGENCY PLANNING**

During the daily safety briefings, all project personnel may be trained in and reminded of provisions of the emergency response plan (ERP), communication systems, and evacuation routes. Evacuation safe areas, as required by project activities, will be designated by the SSHO during the daily briefing. The plan will be reviewed and revised if necessary, on a regular basis by the SSHO. This will ensure that the plan is adequate and consistent with prevailing site conditions.

9.2 **PERSONNEL ROLES AND LINES OF AUTHORITY**

The USEPA POC has the primary authority over all work to be done on-site. The USACE POC has authority over all construction, safety, and environmental work being performed and will work in conjunction with the USEPA POC in coordination of work and any changes that may need to be made. ARDL will oversee all work and report to the USACE POC. ARDL is additionally responsible for ensuring that all required corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. ARDL has the responsibility for site safety and responding to and correcting emergency situations. It is also ARDL's responsibility that all environmental concerns associated with work on-site are performed within specifications and with the proper frequency. This will include all testing, monitoring, data review, and any other potential environmental concerns.

9.3 **EMERGENCY RECOGNITION AND PREVENTION**

Table 3.1 provides a listing of the chemical hazards on-site. Additional hazards as a direct result of field activities are listed in the AHAs, as are the associated prevention and control techniques. Personnel will be familiar with techniques of hazard recognition from pre-assignment training and site-specific briefings. The SSHO is responsible for ensuring that prevention devices or equipment are available to personnel. Possible actions taken by ARDL may involve evacuation of personnel from the area of concern and or evacuation of adjacent residents.

Table 9.1 - Emergency Recognition and Control Measures

<u>HAZARD</u>	<u>PREVENTION/CONTROL</u>	<u>LOCATION</u>
Fire/Explosion	Fire Extinguishers	Vehicles, equipment and project facilities
Spill	Sorbent Materials	Project facilities
Personnel Injury	First Aid Kit	In all vehicles, project facilities

9.4 EVACUATION ROUTES AND PROCEDURES

In the event of an emergency which necessitates an evacuation of the site, the following alarm procedures will be implemented:

- ◆ Evacuation alarm notification should be made using three short blasts on an air horn or vehicle horn, supplemented with verbal warnings, as appropriate. All personnel should evacuate upwind of any activities. Ensure that a predetermined location is identified off-site in case of an emergency, so that all personnel can be accounted for. Personnel shall use the buddy system when evacuating to ensure accountability.
- ◆ Personnel will be expected to proceed to the nearest driveway with their buddy and mobilize to the safe distance area associated with the evacuation route. Personnel will remain at that area until the re-entry alarm is sounded or the SSHO provides further instructions.

9.5 EMERGENCY CONTACT AND NOTIFICATION SYSTEM

The following list provides names and telephone numbers for emergency contact personnel. In the event of a medical emergency, personnel will take direction from the on-site SSHO and notify the appropriate emergency organization. In the event of a fire or spill, the PM will notify the appropriate local, state, and federal agencies. The emergency response contact numbers are as follows:

General Emergency Contacts

Sheila Desai, EPA Project Manager	Office	312-353-4150
Pedro Rosario Gonzáles, USACE Project Manager POC	Office	314-925-5100
	Cell	314-250-5603
Robert Jurgiel, Corporate Safety Consultant	Office	636-757-3060
	Cell	314-280-6035
Rob Dismang, Program Manager	Office	618-244-3235
	Cell	618-231-3740
Mitchell Jenkins, Project Manager/Superintendent	Office	618-244-3235
	Cell	618-316-8114
Chris Creps, Site Safety & Health Officer	Office	618-244-3235
	Cell	618-731-2044
Ann Jacobs, Quality Control Systems Manager	Office	618-244-3235
	Cell	314-323-8959
Fire Department		618-274-4504
Police		618-274-4504
Ambulance		618-337-1956
Gateway Regional Hospital		618-798-3000
USEPA Environmental Response Team		201-321-6460
Illinois Emergency Management Agency		217-782-7860

9.6 EMERGENCY MEDICAL TREATMENT PROCEDURES

Any person who becomes ill or injured in a work zone must first be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket, unless head or spinal injury is indicated.). At least two personnel on-site will have valid first aid and CPR Certificates. First aid should be administered while awaiting an ambulance or paramedics. Each employee attempting to render first aid is performing the service as a Good Samaritan. If there is any doubt as to the injured worker's condition, it is best to let the paramedic or ambulance service examine and transport the worker. All injuries and illnesses must immediately be reported to the SSO.

Any person being transported to a clinic or hospital for treatment should take with them information on the chemical(s) they have been exposed to at the site. This information is included in Table 3.1.

Any vehicle used to transport contaminated personnel will be decontaminated and cleaned as necessary.

9.7 FIRE PROTECTION

To minimize the hazards from fires during site activities, fire extinguishers will be maintained in each vehicle and all equipment. At least 2 portable fire extinguishers, rated at 4A:60B:C or higher, will be maintained in the work zone. In addition, the following procedures will be enforced to prevent fires:

- ◆ Smoking is prohibited around flammable or combustible materials. Smoking is prohibited in all XZs, contamination reduction zones and WZs;
- ◆ The use of open flames in any site area requires the issuance of a hot work permit prior to commencement of such activities;
- ◆ Flammable and combustible liquids must be stored in approved, properly labeled metal safety cans. The safety cans shall be equipped with self-closing lids and spark arrestors;
- ◆ Containers must be grounded and bonded prior to transfer of flammable or combustible liquids;
- ◆ Flammable or combustible liquids stored in drums shall be equipped with self-closing safety faucets, vent bung fittings and drip pans. Such containers shall be stored in an approved area, at least 25 feet away from buildings, structures, and other site activities, where feasible. All containers shall be properly grounded;
- ◆ All vehicles/equipment being fueled shall be in park and turned off. The engine should not be hot unless authorized due to cold weather;

- ◆ All vehicles/equipment being fueled must be electronically bonded, with the fuel storage tank, and grounded;
- ◆ All personnel shall practice good housekeeping by keeping walkways clear, access and egress to fueling areas clear, and remove waste materials.

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival, the on-site SSHO, or designated alternate, will advise the fire commander of the location, nature, and identification of the hazardous materials.

If it is safe to do so, site personnel may:

- ◆ Use fire fighting equipment available on-site to control or extinguish a fire in its incipient stage;
- ◆ Remove or isolate flammable or other hazardous materials which may contribute to the fire.

9.8 SPILL OR LEAKS

The procedures defined in this section comprise the spill containment program in place for the on-site activities at this site.

- ◆ All drums and containers used during project activities shall meet the appropriate DOT, OSHA, and EPA regulations for the waste they contain;
- ◆ Drums and containers shall be inspected, and their integrity assured, prior to being moved. Drums or containers that cannot be inspected before being moved because of storage conditions, shall be positioned in an accessible location and inspected prior to further handling;
- ◆ Operations on-site will be organized to minimize the amount of drum or container movement;
- ◆ Employees involved in the drum or container operations shall be warned of the hazards associated with the containers;
- ◆ Where spills, leaks, or ruptures may occur, adequate quantities of spill containment equipment will be stationed in the immediate area. The spill containment program must be sufficient to contain and isolate the entire volume of hazardous substances being transferred;
- ◆ Drums or containers that cannot be moved without failure, shall be emptied into a sound container;
- ◆ Fire extinguishing equipment meeting 29 CFR part 1910, Subpart I shall be on hand and ready for use to control fires.

In the event of a spill or a leak, site personnel will:

- ◆ Inform the SSHO immediately;
- ◆ Locate the source of the spillage and stop the flow if it can be done safely; and,
- ◆ Begin containment and recovery of the spilled materials.

9.9 CONFINED SPACE ENTRY

Confined space work will not be required on this project. If confined space entry is deemed necessary for any reason, the SSHO must be contacted for further guidance prior to any such entry.

9.10 CONTAINER HANDLING

Due to the nature of the SOW, it is not expected that container handling will be required. If unknown containers are encountered during the performance of the project activities, work in that area will be halted. The SSHO must be immediately notified. No work will be performed in the area of the unknown containers until guidance is received from both the USACE and USEPA representatives and passed on through the SSHO.

9.11 ACCIDENT REPORTING

In the event of an accident, personnel are responsible for reporting all injuries or illnesses as soon as possible to the SSHO. The on-site PM and SSHO are responsible for investigating and reporting accident information and maintaining exposure data. Any accident resulting in a serious injury or fatality must be reported to OSHA within 24 hours and the accident scene shall not be disturbed until it has been released by the investigating authority, except for rescue and emergency measures. The SSHO will notify the USACE POC immediately in the event of an accident or incident. They will file form ENG 3394 with USACE within 2 working days for all reportable accidents resulting in lost workdays, a fatality, permanent disability, 3 or more persons hospitalized, or for property damage of \$2,000 or greater.

9.11.1 ACCIDENTS AND EXPOSURE INVESTIGATION REPORTING

Records of accidents and exposure incidents shall be maintained for this project. A summary of the accident or incident will be maintained in the field notes. Complete written reports will also be prepared, in accordance with procedures specified elsewhere in this SSHP.

9.12 EMERGENCY EQUIPMENT AND FACILITIES

Work activities on this project may present serious health and safety concerns. There will be fire extinguishers in all equipment, in all project vehicles and at project facilities. A portable eyewash station will be available at the project facilities, on the FA, and at least one project vehicle. ANSI/ISEA Z308.1 conforming first aid kits will be in all project vehicles and project facilities. Should the scope of the project extend beyond those tasks outlined in this SSHP, the SSHO must be contacted to review the adequacy of the emergency response equipment prior to the change in scope.

Emergency equipment will be maintained on-site in the support zone in accordance with 29 CFR 1926.50 and any other applicable OSHA regulations.

The basic on-site emergency equipment required for this project includes:

- ◆ First aid kit;
- ◆ Fire extinguisher;
- ◆ Site telephone;
- ◆ Spill kits (as needed);
- ◆ Eye wash

9.12.1 EMERGENCY FACILITIES

For all medical care, the nearest hospital is and emergency room:

Gateway Regional Medical Center (618) 798-3000
2100 Madison Ave.
Granite City, IL 62040

Directions to the hospital from the project area are as follows:

1. 0.9 mi turn left onto Collinsville Rd
2. 400 ft keep right onto IL-111
3. 0.4 mi turn left to merge onto I-55 toward St. Louis
4. 2.1 mi take exit 4b onto IL-203N toward Granite City
5. 3.2 mi continue onto Edwardsville Rd
6. 0.8 mi turn left onto E 20th St
7. 0.7 mi turn right onto Madison Ave
8. 600 ft destination is on your right

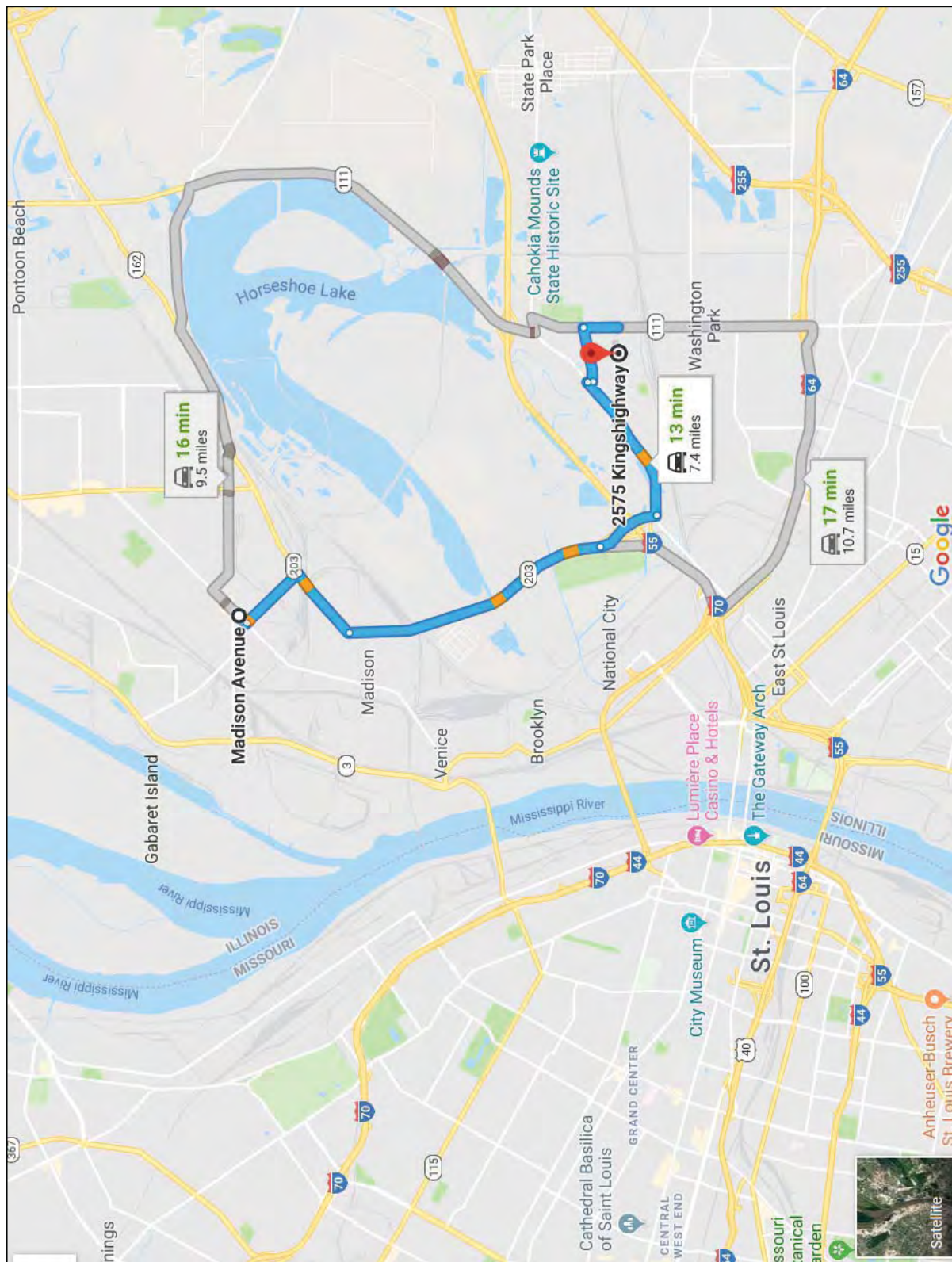
Figure 3 provides a map of the route to Gateway Regional-Clinic from the project area. The route to the hospital should be verified by the on-site SSHO and should be familiar to all site personnel.

The following individuals on-site have current certification in CPR and first aid:

- ◆ Chris Creps
- ◆ Mitchell Jenkins
- ◆ Ann Jacobs

Please refer to Appendix C, for other on-site individuals certified in CPR and first aid.

Figure 3 - Designated/Emergency Project Hospital Route Map



10.0 LOGS, REPORTS, AND RECORDKEEPING

This section will outline the various forms, logs and documentation necessary in recording all safety inspections, initial training, personnel exposure monitoring, equipment maintenance, and other areas of concern. All records will be maintained on-site and be available for inspection by USACE and their authorized agents. For more information regarding logs, reports, and recordkeeping, please refer to Appendix D.

10.1 INITIAL SITE SAFETY BRIEFING

All personnel on the project will have an initial orientation discussing safety topics and how they are interrelated. Further safety training will be used as the project progresses at the discretion of the SSHO or, if requested, by field personnel. The initial site briefing shall be documented in the field notes. These notes should include the subject(s) covered in the briefing, the date, and the names of the trainees. All site visitors are required to have a safety briefing before entering the site and will be escorted while on-site if they do not meet the required training.

10.2 DAILY SAFETY BRIEFING

A daily safety briefing will be conducted prior to commencement of each day's field work. All personnel engaged in field work shall be in attendance. The daily safety briefing shall also be documented in the field notes. These notes should include the subject(s) covered in the briefing, the date, and the names of the trainees.

10.3 INSPECTION LOGS

Daily checks of all PPE consisting of hard hats, safety glasses, high visibility vest, hearing protection, gloves and safety boots to be utilized for planned field activities shall be conducted by field personnel prior to use of such equipment. Any hand tools used shall be inspected by field personnel prior to use assuring they are in good operating condition and all safe guards are in place.

10.4 PERSONNEL EXPOSURE MONITORING

Area monitoring will be done at both the FA and RPs. Personal monitoring will be conducted at the RPs. This monitoring will document potential exposure to hazardous materials, as well as to evaluate the adequacy of the (PPE) program. ARDL will implement the Air Monitoring Plan found in Appendix B.

10.5 EQUIPMENT MAINTENANCE

All site vehicles and heavy equipment will be inspected daily before use and any deficiency will be reported on the daily log. Any site vehicles or heavy equipment deemed not safe to operate shall not be used until repairs are made.

10.6 EMPLOYEE AND VISITOR REGISTER

A daily log of the personnel on-site shall be kept, noting the presence of all personnel and any visitors. The log shall note the name of each worker or visitor, affiliation, time on-site, and the time they left the site. This log shall be maintained as a part of the field notes for the project.

All visitors must obtain the proper protective equipment and complete a site safety orientation and registration prior to entry into the site. A visitor must provide proof that they possess a valid 40-hour HAZWOPER training certification (and applicable refreshers) prior to entry into the exclusion zone or contaminated area on this project. If any visitor cannot provide proof of 40-hour HAZWOPER training completion, they must always be accompanied by project management personnel as an escort. A safety indoctrination and escort are required for all visitors to the work site.

Appendix A

AHA

Activity Hazard Analysis (AHA)

Activity/Work Task	BACK FILL & RESTORATION					Overall Risk Assessment Code (RAC) (Use highest code)		L
AHA Signature Log #								
Project Location	Fairmont City, IL							
Contract Number	W912P918D0014							
Date Prepared	April 12, 2019							
SSHO Signature								
Superintendent Signature								
QC Manager Signature								
Subcontractor Foreman Name:	James Christopher							
Signature:								
QA Reviewed by (Name/Title)	Ann Jacobs							
Notes: (Field Notes, Review Comments, etc)								

		Risk Assessment Code (RAC) Matrix				Probability	
		Severely	Frequent	Likely	Occasional		Seldom
Catastrophic		E	E	E	H	H	M
Critical			E	H	H	M	L
Marginal			H	M	M	L	L
Negligible			M	L	L	L	L
Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).							
RAC CHART							
E = Extremely High Risk							
H = High Risk							
M = Moderate Risk							
L = Low Risk							

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Site-specific/Job-specific training for workers	Employees not trained in the safe execution of their tasks may harm themselves or others	- Use this Activity Hazard Analysis, Lead awareness training, site-specific training and any other applicable training as a means to train workers. NOTE: If the scope of work detailed below changes in any way, the SSHO will complete an AHA amendment detailing the new scope of work.	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Shield/Guard utilities	Burns and Fires (gas lines), electrocution or electrical fires (electrical lines), flooding and pressure (water lines), flooding and biohazards (sewage)	<ul style="list-style-type: none"> - Verify utilities previously located are in working order. - Exposed underground utilities shall be marked. - Each operator on the job should be aware of the location of all underground utilities, structures, tanks, etc. - Verify utility locations on each lift of backfill and exercise precaution when working near the utilities. - Ensure all utilities are in working order after backfilling is complete. 	L
Set up barricades and caution-off area.	Entry of unauthorized personnel Knocking down power lines	<ul style="list-style-type: none"> - Set up warning barricades or temp. fencing and caution off area where earthwork is ongoing to prevent the entry of unauthorized personnel. - Caution tape off power poles and guy wires, as necessary. - Use caution when operating heavy equipment near utility lines. 	L
Inspect Equipment	Equipment failure- or unsafe operation Fires, explosions- burns Backing over workers or running into equipment	<ul style="list-style-type: none"> - Inspect each piece of equipment prior to the start of each day. Use the checklist for that piece of equipment. - Make sure recommended preventive maintenance is being performed and a log maintained. - Lubrication points should show signs of recent maintenance. - A fire extinguisher is provided at the operator's compartment - Ensure that the backup alarm is fully operational 	L
Put on your personal protective equipment.	Head, foot, or eye injury Personnel being struck by equipment/trucks Hearing damage	<ul style="list-style-type: none"> - Workers entering the job site must wear a hard hat, safety glasses, high visibility vests or clothing, and safety-toed work boots AT ALL TIMES. - Wear gloves when handling sharp objects. - Do not wear clothing or jewelry that could easily get snagged or caught by equipment or machinery. 	L
Excavating - Hand digging	Pulls and strains from digging Foot, hand, or leg injuries	<ul style="list-style-type: none"> - Don't be too aggressive when moving heavy or wet material. - Use proper lifting techniques. - Make sure that wooden handles for tools are secured tightly in the tool and are free of cracks and splinters. - Wear appropriate PPE 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Place fill and compaction	<p>Inability to see clearly</p> <p>Falling from the machine</p> <p>Hazardous noise, hearing loss</p> <p>Crushed by</p> <p>Slips, trips, and falls</p>	<ul style="list-style-type: none"> - Keep the windshield and other glazing clean so that your view is unobstructed. - Make sure the windshield wipers work and all mirrors are properly adjusted. - Look in the direction of travel. <p>Wear your seat while operating the machine.</p> <ul style="list-style-type: none"> - Employees shall not ride in buckets or on any part of the machine other than the seat. - Wear foam ear plugs when working on equipment where sound pressure levels are between 85 dB(A) and 115 dB(A) time-weighted avg. over 8 hrs. When sound levels exceed 115 dB(A) foam ear plugs and earmuffs shall be worn. - Mechanical vibration increases the likelihood of an injury. - Do not operate a compactor in an unprotected trench. - Be sure to backfill in proper lifts to avoid settling. 	L
Grading	<p>Crushed or struck by moving equipment</p> <p>Creation of a low, water collecting area</p>	<ul style="list-style-type: none"> - Keep the windshield and other glazing clean so that your view is unobstructed. - Make sure the windshield wipers work and all mirrors are properly adjusted. - Look in the direction of travel. - Wear your seat while operating the machine. - Employees shall not ride in buckets or on any part of the machine other than the seat. - Wear foam ear plugs when working on equipment where sound pressure levels are between 85 dB(A) and 115 dB(A) time-weighted avg. over 8 hrs. When sound levels exceed 115 dB(A) foam ear plugs and earmuffs shall be worn. <p>A competent person shall ensure all grading is done properly and that all water will drain correctly after grading.</p> <ul style="list-style-type: none"> - Team lift heavy or awkward materials. - Use safe lifting techniques. - Use material handling aids whenever possible. - Be aware of your surroundings and watch where you are going while carrying material. - Never move materials above coworkers. - Always check tools prior to each use. - Always use the correct tool for the job. - Use caution when replanting as not to come into contact with any underground utilities. 	L
Install vegetation	<p>Strains from lifting</p> <p>Striking and injuring co-workers with materials</p> <p>Crushed by</p> <p>Cuts</p>	<ul style="list-style-type: none"> - Team lift heavy or awkward materials. - Use safe lifting techniques. - Use material handling aids whenever possible. - Be aware of your surroundings and watch where you are going while carrying material. - Never move materials above coworkers. - Always check tools prior to each use. - Always use the correct tool for the job. - Use caution when replanting as not to come into contact with any underground utilities. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Getting on and off the machine	Slipping and falling Crushed or pinched injuries from moving equipment	<ul style="list-style-type: none"> - Use three points of contact with the machine at all times. - Be especially careful in the rain or mud. - Whenever the machine is unattended the bucket/blades are lowered, brakes set, controls neutralized, and the engine is shut down. 	L
Roll up Equipment; Clean-up	Slipping, Tripping, or Falling	<ul style="list-style-type: none"> - Store equipment out of the way. - Clean up work area at the end of each day. - Stage equipment and materials in designated areas. - Put vehicles parked in correct locations and stored properly - Never throw or drop scrap and debris in the work area. - Place combustibles in approved containers. 	L
Working in hot weather	Heat Stroke, Heat Exhaustion, Heat Cramps Sunburn	<ul style="list-style-type: none"> - Make sure you always have an adequate supply of cold water available. If your water supply is running low talk to your supervisor. - Take scheduled cool down breaks. - Provide ventilation or air-cooling equipment for enclosed work areas. - Use sunscreen as needed. - Respond quickly and decisively in case of an accident. Call 911 immediately. - Know where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Responding to an emergency	Delayed emergency response- further injury or loss of life	<ul style="list-style-type: none"> - Respond quickly and decisively in case of an accident. - Know where the emergency numbers are posted, where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Administering First Aid	Exposure to bloodborne pathogens	<ul style="list-style-type: none"> - Use appropriate PPE when administering first aid such as gloves, masks, eye protection and/or resuscitation equipment especially when blood is present - Wash after contact with blood or other body fluids - Dispose of soiled material in a labeled leak-proof container 	L

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
Compaction equipment	Operator Training Review of Manufacturer's Operating Manual when necessary Activity Hazard Analysis: Review utility locations and use precaution with each new step or lift or backfill material	- Conduct Daily Inspection prior to use
Hand Tools	Trained by competent person before use.	- Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately.
Field/ Project or Dump/Work Truck	Valid Driver's License Required. Valid Insurance Certificate Required. Review Owner's Manual when necessary.	- Activity Hazard Analysis Review for each worker. - Fire extinguisher with each truck. - Vehicle must be properly maintained and in good working order. - Owner's Manual must be with vehicle. - Inspect daily prior to each shift.
Personal Protective Equipment (PPE)	All workers will be trained in the proper donning and use of PPE before beginning work.	- Inspect ALL PPE prior to each use. Any damaged PPE will be replaced immediately.
First Aid Kits	A MINIMUM of 2 individuals trained in CPR/First Aid will be on-site and available to render aid at all times.	- First Aid Kits will be inspected monthly for damage and/or missing items which shall be replaced immediately.
Hand Tools	Trained by site supervisor before use.	- Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately.
Skidsteer	Operator Training and Certification/License Review of Manufacturer's Operating Manual Activity Hazard Analysis Review: Use precaution around all utilities	- Conduct Daily Inspection prior to use - including Back-up Alarm and Maintenance Records. - Operators Manual shall be on all equipment. - Equipment will be equipped with Fire Extinguisher.

Competent Person

Signature

Activity/Work Task: BACK FILL & RESTORATION

Contract Name: OAZ

Contract Number: W912P918D0014

Competent Persons

Name: Signature: Date:

Meeting Attendees

Name: Signature: Date:

Activity Hazard Analysis (AHA)

Activity/Work Task	EXCAVATION OF CONTAMINATION					Overall Risk Assessment Code (RAC) (Use highest code)	M
AHA Signature Log #							
Project Location	Fairmont City, IL						
Contract Number	W912P918D0014						
Date Prepared	April 12, 2019						
SSHO Signature							
Superintendent Signature							
QC Manager Signature							
Subcontractor Foreman Name:	James Christopher						
Signature:							
QA Reviewed by (Name/Title)	Ann Jacobs						
Notes: (Field Notes, Review Comments, etc)							

Risk Assessment Code (RAC) Matrix	
Probability	
Frequent	Likely
E	E
E	H
H	M
M	L
M	L
L	L
Unlikely	

Frequent	Likely	Occasional	Seldom	Unlikely
E	E	H	H	M
E	H	H	M	L
H	M	M	L	L
M	L	L	L	L

Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).	RAC CHART	
Probability: Likelihood the activity will cause a Mishap (Near Miss, Incident, or Accident). Identify as Frequent, Likely, Occasional, Seldom or Unlikely	E = Extremely High Risk	
Severity: The outcome if a mishap occurred. Identify as Catastrophic, Critical, Marginal, or Negligible	H = High Risk	
Step 2: Identify the RAC (probability vs. severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of the AHA	M = Moderate Risk	
	L = Low Risk	

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Site-specific/Job-specific training for workers	Personnel not trained in the safe execution of their tasks may harm themselves or others	- Use this Activity Hazard Analysis, Lead awareness training, site-specific training and any other applicable training as a means to train workers. - All personnel must have 40 hr. HAZWOPER training NOTE: If the scope of work detailed below changes in any way, the SSHO will complete an AHA amendment detailing the new scope of work.	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Locate utilities	Underground lines: - high pressure lines - water, sewer, and communication lines Aerial utility lines explosion and fire private power or propane lines electrocution or shock	<ul style="list-style-type: none"> - Call JULIE (811) before digging. Have them locate and mark all underground utilities. - A third party utility locating contractor may be used to locate and mark private lines. - Pot-hole for utilities to locate the exact location before beginning a full excavation. Hand excavate when within 2 feet of a utility so that it is not damaged. - Locate and, when needed, mark aerial utility lines. - Each operator on the job should be aware of the location of all underground utilities, structures, tanks, etc. - Workers entering the job site must wear a hard hat, safety glasses, high visibility vest (or clothing) and safety-toed work boots AT ALL TIMES. - Wear gloves when handling sharp objects. - Do not wear clothing or jewelry that could easily get snagged or caught by equipment or machinery. 	L
Put on your personal protective equipment.	Head, foot, hand, or eye injury Struck by hazards Hearing damage	<ul style="list-style-type: none"> - Set up warning barricades or temp. fencing, and caution off area where earthwork is ongoing to prevent the entry of unauthorized personnel. - Caution tape off power poles and guy wires as needed. Always be careful when operating heavy equipment near utility lines. 	L
Set up barricades and caution-off area.	Entry of unauthorized personnel Knocking down power lines	<ul style="list-style-type: none"> - Inspect each piece of equipment prior to the start of each day. Use the checklist for that piece of equipment. - Make sure recommended preventive maintenance is being performed and a log maintained. - Lubrication points should show signs of recent maintenance. - A fire extinguisher is provided at the operator's compartment - Ensure that the backup alarm is fully operational 	L
Inspect Equipment	Equipment failure- or unsafe operation Fires, explosions- burns Backing over workers or running into equipment	<ul style="list-style-type: none"> - Use only approved metal safety cans or tanks to store and dispense fuel. - Place oily or fuel soaked rags and other combustibles in approved containers. - DO NOT SMOKE WHILE RE-FUELING - For gasoline powered equipment attach the grounding wire from the fuel tank to the equipment before fueling. 	L
Re-fuel equipment	Fires, explosions- burns		L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Getting on and off the machine	Slipping and falling Crushed or pinched injuries from moving equipment	<ul style="list-style-type: none"> - Use three points of contact with the machine at all times. - Be especially careful in the rain or mud. - Whenever the machine is unattended the bucket/blades are lowered, brakes set, controls neutralized, and the engine is shut down. - Before beginning each phase of work the CQCSM will explain to the workers what needs to be done and how the work will proceed. - Be aware of your surroundings while moving materials, watch where you are going. - Never move materials over or above workers. - Ground personnel and operators shall maintain visual or verbal communication. - The proper route for hauling will be given to all applicable personnel. 	L
Layout, communication, and preparatory instructions	Lack of coordination between workers- Mistakes, Injuries	<ul style="list-style-type: none"> - Be aware of the location of workers in and around the excavation at all times. - Stand away from equipment that is loading or unloading excavated material. - Never move excavated material over or above workers. 	L
Excavating - Heavy Equipment	Striking and injuring co-workers with equipment or material Struck by falling material Roll over or equipment failure	<ul style="list-style-type: none"> - Do not allow workers to stand or walk under the elevated portion of the machine. - Know the limits of your machine. Do not push the limits of the machine. - Stay away from the face of any cut where you could fall to the lower level. - Stay clear of the machine swing radius. - Never approach operating machinery without making contact with the operator. - Don't be too aggressive when moving heavy or wet material. 	M
Excavating - Hand digging	Pulls and strains from digging Foot, hand or leg injuries	<ul style="list-style-type: none"> - Use proper lifting techniques. - Make sure that wooden handles for tools are secured tightly in the tool and are free of cracks and splinters. - Wear proper PPE. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Working in hot weather	Heat Stroke, Heat Exhaustion, Heat Cramps Sunburn	<ul style="list-style-type: none"> - Make sure you always have an adequate supply of cold water available. If your water supply is running low talk to your supervisor. - Take scheduled cool down breaks. - Provide ventilation or air cooling equipment for enclosed work areas. - Use sunscreen, when needed. - Respond quickly and decisively in case of an accident. - Know where the emergency numbers are posted, where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. - Store equipment out of the way. - Clean up work area at the end of each shift. 	L
Roll up Equipment & Clean-up	Slipping, Tripping, or falling, and Delayed Egress Contaminated material spreading	<ul style="list-style-type: none"> - Stage equipment and materials in designated lay down areas. - Never throw or drop scrap and debris in the work area. - Place combustibles in approved containers. - If needed, decontaminate. - Respond quickly and decisively in case of an accident. - Know where the emergency numbers are posted, where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. - Use appropriate PPE when administering first aid such as gloves, masks, eye protection and/or resuscitation equipment especially when blood is present - Wash after contact with blood or other body fluids - Dispose of soiled material in a labeled leak-proof container - Hazardous material waste shall be hauled to the FA and dumped in the consolidation area. 	L
Responding to an emergency	Delayed emergency response- further injury or loss of life	<ul style="list-style-type: none"> - All hazardous waste shall be hauled in accordance with all Federal, State, local, and contractual requirements. - Drivers shall obey all traffic safety laws and requirements. 	L
Administering First Aid	Exposure to blood-borne pathogens		L
Handling/Disposal	Spreading Contamination Traffic collisions		L

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
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Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
Hand Tools	Trained by competent person before use.	<ul style="list-style-type: none"> - Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately.
Field/Work Truck	Valid Driver's License Required. Valid Insurance Certificate Required. Review Owner's Manual. Activity Hazard Analysis Review for each worker.	<ul style="list-style-type: none"> - Activity Hazard Analysis Review for each worker. - Vehicle must be properly maintained and in good working order. - Owner's Manual must be with vehicle. - Inspect daily prior to each shift. - Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order. - Daily Inspection prior to use.
Water Truck	Valid Driver's License Required Valid Insurance Certificate Required. Activity Hazard Analysis Review for each worker.	<ul style="list-style-type: none"> - Conduct Daily Inspection prior to use - including Back-up Alarm and Maintenance Records. - Operators Manual shall be on all equipment. - Equipment will be equipped with Fire Extinguisher.
Skidsteer	Operator Training and Certification/License Review of Manufacturer's Operating Manual Activity Hazard Analysis Review	<ul style="list-style-type: none"> - Conduct Daily Inspection prior to use - including Back-up Alarm and Maintenance Records. - Operators Manual shall be on all equipment. - Equipment will be equipped with Fire Extinguisher. - Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order.
Excavator	Operator Training and Certification/License Review of Manufacturer's Operating Manual Activity Hazard Analysis Review	<ul style="list-style-type: none"> - Conduct Daily Inspection prior to use - including Back-up Alarm and Maintenance Records. - Operators Manual shall be on all equipment. - Equipment will be equipped with Fire Extinguisher. - Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order.
Dump Truck	Valid Driver's License Required Valid Insurance Certificate Required.	<ul style="list-style-type: none"> - Inspect ALL PPE prior to each use. Any damaged PPE will be replaced immediately.
Personal Protective Equipment (PPE)	Activity Hazard Analysis Review for each worker. All workers will be trained in the proper donning and use of PPE before beginning work.	<ul style="list-style-type: none"> - First Aid Kits will be inspected monthly for damage and/or missing items which shall be replaced immediately.
First Aid Kits	A MINIMUM of 2 individuals trained in CPR/First Aid will be on-site at all times.	

Competent Person

Signature

Activity/Work Task: EXCAVATION OF CONTAMINATION

Contract Name: OAZ

Contract Number: W912P918D0014

Competent Persons

Name: Signature: Date:

Meeting Attendees

Name: Signature: Date:

TRANSPORTATION		Activity Hazard Analysis (AHA)				Overall Risk Assessment Code (RAC) (Use highest code)		L
Activity/Work Task	AHA Signature Log #							
Project Location	Fairmont City, IL	Risk Assessment Code (RAC) Matrix						
Contract Number	W912P918D0014	Probability						
Date Prepared	April 12, 2019	Severity	Frequent	Likely	Occasional	Seldom	Unlikely	
SSSHO Signature	James Christopher	Catastrophic	E	E	H	H	M	
Superintendent Signature	Mitchell Jenkins	Critical	E	H	H	M	L	
QC Manager Signature		Marginal	H	M	M	L	L	
Subcontractor Foreman Name:		Negligible	M	L	L	L	L	
Signature:		Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).						
QA Reviewed by (Name/Title)						RAC CHART		
Notes: (Field Notes, Review Comments, etc)		Probability: Likelihood the activity will cause a Mishap (Near Miss, Incident, or Accident). Identify as Frequent, Likely, Occasional, Seldom or Unlikely				E = Extremely High Risk		
		Severity: The outcome if a mishap occurred. Identify as Catastrophic, Critical, Marginal, or Negligible				H = High Risk		
		Step 2: Identify the RAC (probability vs. severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of the AHA				M = Moderate Risk		
						L = Low Risk		

Specific Anticipated Hazards

		Controls	RAC
Job Steps (Work Sequences)		<p>- Use this Activity Hazard Analysis, lead awareness training, site-specific training, and any other applicable training as a means to train workers.</p> <p>- All personnel shall have 40 hr HAZWOPER training.</p> <p>NOTE: If the scope of work detailed below changes in any way, the SSHO will complete an AHA amendment detailing the new scope of work.</p>	L
Site-specific/Job-specific training for workers	Employees not trained in the safe execution of their tasks may harm themselves or others		

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Review Approved Transportation and Disposal Plan	Lack of Coordination Accidents involving vehicles/pedestrians Serious injury / Death	<ul style="list-style-type: none"> - Prior to commencement of operations involving transportation, submit a Transportation and Disposal Plan for approval. - Prior to implementation of the Transportation and Disposal Plan, obtain any required permits from local or state authorities. - Use barricades and signage that are highly visible and at the least meet the minimum DOT requirements. - Workers entering the job site must wear a hard hat, safety glasses, reflective vest and safety-toed work boots AT ALL TIMES. - Wear gloves when handling sharp objects. - Do not wear clothing or jewelry that could easily get snagged or caught by equipment or machinery. 	L
Put on your personal protective equipment for Traffic Control	Head, foot, or eye injury Hearing damage Not visible to traffic / Vehicles Struck by / Run over Personnel being struck by equipment/trucks Serious injury / Death	<ul style="list-style-type: none"> - Be sure to look both directions before pulling off site into traffic. - Check equipment before exiting site. Assume that equipment is locked and in a safe area. - Close and lock the gate onto the site. Either take your key with you or if needed, return key to lock box. - Ensure fencing is erect around excavation areas at residential properties. - Assume the gate is closed and locked before leaving site for the day. 	L
Site Security - Entry and Egress	Blind spots Pulling into traffic equipment access/tampering site access to unauthorized personnel	<ul style="list-style-type: none"> - Set up warning barricades or temp. fencing and caution off area where earthwork is ongoing to prevent the entry of unauthorized personnel. - Caution tape off power poles and guy wires as needed. - Use caution when operating heavy equipment near utility lines. 	L
Set up barricades and caution-off area.	Entry of unauthorized personnel Knocking down power lines traffic collisions	<ul style="list-style-type: none"> - Prior to installation, stage signs and other devices along the shoulder so that they can be quickly moved into position. - As needed, install advance warning signs beginning with signs located on the right shoulder first. Then working with the traffic flow towards the Work Area. - Install traffic control devices in the Buffer Area and then the Work Area. - Review the installation for good driver navigation and make appropriate adjustments. 	L
Install Traffic Control Devices in Work Zones	Lack of adequate traffic control Errant vehicles Struck by / Run over Serious injury / Death		

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Traffic Control	Struck by moving vehicles Vehicle collisions	<ul style="list-style-type: none"> - Use spotters as needed where visibility is limited. - Provide a flag person when operations create a traffic hazard. - Flag persons shall wear an approved high visibility vest. - Ensure spotters and equipment operators, to include truck drivers, have either verbal or visual communication. - Only Qualified Persons shall be appointed by a competent person participate in flagging operations. - Inventory the devices you plan to use. Make sure that they are all clean and in good working order. - Discuss safe procedures and proper personal protective equipment with the team. - Make sure workers have proper training prior to assignment. - Identify appropriate emergency contacts. - Notify appropriate law enforcement, as needed. - stand on the shoulder adjacent to the road or in the closed lane prior to stopping the road users. - be clearly visible to the first approaching road users at all times and should also remain visible to other road users. - always stand alone and never permit a group of workers to gather around the flagging station. - communicate specific instructions clearly, firmly, and courteously. - move and maneuver quickly in order to avoid danger from errant vehicles or equipment. - control signaling devices in order to provide clear and positive guidance to drivers approaching work zone. - be able to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury. - NOT TALK OR TEXT ON A CELL PHONE while performing traffic control operations. 	L
Flagging Operations Advance Preparation	Lack of Communication Lack of Training Serious injury / Death	<ul style="list-style-type: none"> - Inventory the devices you plan to use. Make sure that they are all clean and in good working order. - Discuss safe procedures and proper personal protective equipment with the team. - Make sure workers have proper training prior to assignment. - Identify appropriate emergency contacts. - Notify appropriate law enforcement, as needed. - stand on the shoulder adjacent to the road or in the closed lane prior to stopping the road users. - be clearly visible to the first approaching road users at all times and should also remain visible to other road users. - always stand alone and never permit a group of workers to gather around the flagging station. - communicate specific instructions clearly, firmly, and courteously. - move and maneuver quickly in order to avoid danger from errant vehicles or equipment. - control signaling devices in order to provide clear and positive guidance to drivers approaching work zone. - be able to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury. - NOT TALK OR TEXT ON A CELL PHONE while performing traffic control operations. 	L
Flagging / Signaling Operations	Not being visible to approaching vehicles Out-of-control vehicles Caught between Struck by/ Run over Serious Injury / Death	<ul style="list-style-type: none"> - Inventory the devices you plan to use. Make sure that they are all clean and in good working order. - Discuss safe procedures and proper personal protective equipment with the team. - Make sure workers have proper training prior to assignment. - Identify appropriate emergency contacts. - Notify appropriate law enforcement, as needed. - stand on the shoulder adjacent to the road or in the closed lane prior to stopping the road users. - be clearly visible to the first approaching road users at all times and should also remain visible to other road users. - always stand alone and never permit a group of workers to gather around the flagging station. - communicate specific instructions clearly, firmly, and courteously. - move and maneuver quickly in order to avoid danger from errant vehicles or equipment. - control signaling devices in order to provide clear and positive guidance to drivers approaching work zone. - be able to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury. - NOT TALK OR TEXT ON A CELL PHONE while performing traffic control operations. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Drive Vehicle - Site	Striking workers or pedestrians Blind spots Backing into traffic	<ul style="list-style-type: none"> - Do a walk around directly prior to exiting and moving the vehicle. - Ensure that backup warning device is fully functional prior to backing. - Honk horn twice before backing. Make sure they see you. - If backing, ALWAYS ask for the assistance of a spotter. - If needed, decontaminate vehicle prior to exiting. 	L
Street Sweeping	Dust inhalation Tracking contamination off-site Struck by	<ul style="list-style-type: none"> - Ensure that machine does not allow fugitive dust to exit. - Use proper vehicle operation safety. - If needed use a flagger/spotter. - Ensure material contained by sweeping machinery. - Ensure that all contamination has been removed from roadway. 	L
Remove Traffic Control Devices in Work Zone	Lack of adequate traffic control Errant Vehicles Struck by / Run over Serious injury / Death	<ul style="list-style-type: none"> - Make sure that Work Area is clear and cleaned before removing traffic control devices. - Remove traffic control devices from the Work Area followed by the Buffer Area. - Remove traffic control devices from the Transition area, working against the flow of traffic. - Remove advanced warning signs from the Advance Warning Area. 	L
Working in hot weather	Heat Stroke, Heat Exhaustion, Heat Cramps Sunburn	<ul style="list-style-type: none"> - Make sure you always have an adequate supply of cold water available. If your water supply is running low talk to your supervisor. - Take scheduled cool down breaks. - Provide ventilation or air cooling equipment for enclosed work areas. - Use sunscreen as needed. - Respond quickly and decisively in case of an accident. Call 911 immediately. - Know where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Responding to an emergency	Delayed emergency response- further injury or loss of life	<ul style="list-style-type: none"> - Respond quickly and decisively in case of an accident. Call 911 immediately. - Know where the emergency numbers are posted, where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Administering First Aid	Exposure to blood-borne pathogens	<ul style="list-style-type: none"> - Use appropriate PPE when administering first aid such as gloves, masks, eye protection and/or resuscitation equipment especially when blood is present - Wash after contact with blood or other body fluids - Dispose of soiled material in a labeled leak-proof container 	L

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
Personal Protective Equipment (PPE)	All workers will be trained in the proper donning and use of PPE before beginning work.	- Inspect ALL PPE prior to each use. Any damaged PPE will be replaced immediately.
First Aid Kits	A MINIMUM of 2 individuals trained in CPR/First Aid will be on-site at all times.	- First Aid Kits will be inspected monthly for damage and/or missing items which shall be replaced immediately.
Field/Work Truck	Valid Driver's License Required. Valid Insurance Certificate Required. Review Owner's Manual. Activity Hazard Analysis Review for each worker.	<ul style="list-style-type: none"> - Activity Hazard Analysis Review for each worker. - Vehicle must be properly maintained and in good working order. - Owner's Manual must be with vehicle. - Inspect daily prior to use.
Dump Truck	Valid Driver's License Required Valid Insurance Certificate Required. Activity Hazard Analysis Review for each worker.	<ul style="list-style-type: none"> - Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order.
Hand Tools	Trained by competent person before use.	- Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately.

Competent Person

Signature

Activity/Work Task: TRANSPORTATION
Contract Name: OAZ SURROUNDING PROPERTIES REMEDIATION
Contract Number: W912P918D0014

Competent Persons

Name: Signature: Date:

Meeting Attendees

Name: Signature: Date:

Activity Hazard Analysis (AHA)

Activity/Work Task	SITE PREPERATION		Overall Risk Assessment Code (RAC) (Use highest code)				L
AHA Signature Log #							
Project Location	Fairmont City, IL						
Contract Number	W912P918D0014						
Date Prepared	April 12, 2019						
SSHO Signature							
Superintendent Signature							
QC Manager Signature							
Subcontractor Foreman Name:	James Christopher						
Signature:							
QA Reviewed by (Name/Title)	Ann Jacobs						
Notes: (Field Notes, Review Comments, etc)							

Risk Assessment Code (RAC) Matrix		Probability				Overall Risk Assessment Code (RAC)	
Severity	Frequent	Likely	Occasional	Seldom	Unlikely		
Catastrophic	E	E	H	H	M		
Critical	E	E	H	M	L		
Marginal	H	M	L	L	L		
Negligible	M	L	L	L	L		
Step 1: Review each Hazard with identified safety "Controls". Determine RAC (see above).							
RAC CHART E = Extremely High Risk							
H = High Risk							
M = Moderate Risk							
L = Low Risk							

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Site-specific/Job-specific training for workers	Employees not trained in the safe execution of their tasks may harm themselves or others	- Use this Activity Hazard Analysis, Lead awareness training, Site-specific training and any other applicable training as a means to train workers. - All personnel must have 40 HAZWOPER training. NOTE: If the scope of work detailed below changes in any way, the SSHO will complete an AHA amendment detailing the new scope of work.	L
Put on your personal protective equipment.	Head, foot, or eye injury Personnel being struck by equipment/trucks Hearing damage	- Workers entering the job site must wear a hard hat, safety glasses, reflective vests and safety-toed work boots AT ALL TIMES. - Wear gloves when handling sharp objects. - Do not wear clothing or jewelry that could easily get snagged or caught by equipment or machinery.	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Survey the Site	Overhead utility Lines Underground hazards Utilities Hazardous Agents in Soil	<ul style="list-style-type: none"> - Locate all overhead electrical lines and communication lines. Mark lines as needed. - Locate all underground utility markings and locations - Review documentation concerning possible hazardous materials/toxic agents in soil. - Call utility companies and/or other responsible authorities before you dig. Have them locate and mark all underground utilities. - Each operator on the job should be aware of the location of all underground utilities, structures, tanks, ect. 	L
Locate utilities	Private utilities Traffic biological hazards	<ul style="list-style-type: none"> - Ensure that fence is free from tears, rips or weak areas. - Wear gloves and other applicable PPE when installing. - Do not secure fencing without proper PPE. - Do not install fencing alone 	L
Install Silt Fence	Smashed fingers Cuts and scrapes	<ul style="list-style-type: none"> - Where there is a danger of surface water entering the work area install silt fence or place sand bags to prevent the water from reaching the area. 	L
Place sand bags for water control / Divert runoff	Water entering the contaminated/excavated area	<ul style="list-style-type: none"> - Set up warning barricades or temp. fencing and caution off area where earthwork is ongoing to prevent the entry of unauthorized personnel. - When necessary, tape power poles, and/or lines, and guy wires. 	L
Set up barricades and caution-off area.	Entry of unauthorized personnel Knocking down power lines	<ul style="list-style-type: none"> - Wear proper PPE, including gloves and protective footwear - Be careful to keep away from pinch-points. - Team lift heavy or awkward fencing sections. - Use safe lifting techniques. - Use material handling aids whenever possible. - Be aware of your surroundings and watch where you are going while carrying material. - Never move materials above coworkers. - Use caution and always wear proper PPE when cutting fence. 	L
Install Temporary Fencing	Strains from lifting Striking and injuring co-workers with materials Cuts Pinch points	<ul style="list-style-type: none"> - Only trained personnel, approved by a competent person, shall operate machinery. 	L
Train operator	Employees not trained in the safe execution of their tasks may harm themselves or others		

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Re-fuel equipment	Fires, explosions- burns	<ul style="list-style-type: none"> - Use only approved metal safety cans or tanks to store and dispense fuel. - Place oily or fuel soaked rags and other combustibles in approved containers. - DO NOT SMOKE WHILE RE-FUELING - For gasoline powered equipment attach the grounding wire from the fuel tank to the equipment before fueling. - Wear proper PPE including eye and face protection (when needed), ear protection, gloves, long sleeves, leg protection, protective footwear. - Do not fuel chain saw while running or while hot - Hold chain saw with both hands during all cutting operations. - Chain saw MUST HAVE an automatic chain brake or kickback device. - Chain shall not move while engine is at idle. - NEVER cut above the operator's shoulder height. - Do not smoke around dried brush. - Use care when removing landscaping as to not damage property. 	L
Brush and landscaping removal	Cuts, Abrasions Eye Injuries Injuries by equipment	<ul style="list-style-type: none"> - Inspect each piece of equipment prior to use. - Make sure preventive maintenance is being performed. - Lubrication points should show signs of recent maintenance. - A fire extinguisher is provided at the operator's compartment - Ensure that the backup alarm is fully operational 	L
Inspect Equipment	Equipment failure- or unsafe operation	<ul style="list-style-type: none"> - Use three points of contact with the machine at all times. - Be especially careful in the rain or mud. - When the machine is unattended the platform is lowered, brakes set, controls neutralized, and the engine is shut down. 	L
Getting on and off the machine	Slipping and falling Crushed or pinched injuries from moving equipment		L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Operating Chain Saw and Felling trees	Binding / Kickback of Chain Saw Cuts, Abrasions Eye Injuries Hearing Damage Serious Injury/Death	<ul style="list-style-type: none"> - The operator shall hold the saw with both hands during all cutting operations. - Operators will wear personal protective equipment as prescribed by the designated authority. Eye, ear, hand, foot (safety shoes), and leg protection are required as a minimum unless specifically waived by the designated authority. - The chain saw must never be used to cut above the operator's shoulder height. - Chainsaw must have an automatic chain brake or kickback device. - The idle speed shall be adjusted so that the chain does not move when the engine is idling. - Before starting to cut, the operator must be sure of footing and must clear away brush or other materials that might interfere with cutting operations or escape route. - The operator will shut off the saw when carrying it over slippery surfaces, through heavy brush, and when adjacent to personnel. - Before cutting, the operator shall ensure trees are to be cleared, and no more than 4" DBH. 	L
Perform Preventative Maintenance	Inadvertent Engine Start Vehicle Movement Cuts/Scrapes/Burns Pinched/Smashed Appendages Eye Damage Hearing Damage Crush/Serious Injury	<ul style="list-style-type: none"> - Ensure the use of LOTO (Lock Out/Tag Out) procedures are followed. Remove key, remove battery cable. - Fully engage Parking Brake. - Wear all proper and required PPE, including eye wear, gloves, and face shield. 	L
Working in hot weather	Heat Stroke, Heat Exhaustion, Heat Cramps Sunburn, Heat stress	<ul style="list-style-type: none"> - Make sure you always have an adequate supply of cold water available. If your water supply is running low talk to your supervisor. - Take scheduled cool down breaks. - Provide ventilation or air cooling equipment for enclosed work areas. - Use sunscreen, as needed. - Be aware of the signs of heat stress and watch for them in yourself and coworkers. - Know where the first aid kit is, and who is trained in first aid. - Only persons trained in first aid should be allowed to administer first aid. 	L
Cold stress	Cold stress	Be aware of the symptoms of cold stress and watch for them in yourself and coworkers. Know who to contact if you or a coworker develops cold stress symptoms.	L

Job Steps (Work Sequences)	Specific Anticipated Hazards	Controls	RAC
Monitor Weather Conditions	Lightning Strike Severe Burns Electrocution Death	- Weather conditions shall be continually monitored.	L
Roll up Equipment & Clean-up	Slipping, Tripping, or falling. Spreading contaminated materials	- Store equipment out of the way. Roll up hoses and cords at end of day. - Clean up work area at the end of each shift. - Stage equipment in designated lay down areas. - Never throw or drop any debris in work area. - Place combustibles in approved containers.	L
Administering First Aid	Exposure to blood-borne pathogens	- Use appropriate PPE when administering first aid such as gloves, masks, eye protection and/or resuscitation equipment especially when blood is present - Wash after contact with blood or other body fluids - Dispose of soiled material in a labeled leak-proof container	L

Equipment to be Used	Training Requirements & Competent or Qualified Personnel Names	Inspection Requirements
Hand Tools	Trained by competent person before use.	- Inspected daily for broken parts, loose handles or components etc. Any equipment found defective will be tagged, taken out of service and replaced immediately. - Conduct Daily Inspection prior to use.
Excavator	Operator Training and Certification/License. Review of Manufacturer's Operating Manual. Activity Hazard Analysis Review.	- Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order. - Daily Inspection prior to use.
Water Truck	Valid Driver's License Required. Activity Hazard Analysis Review for each worker.	- Vehicle must be equipped with a Fire Extinguisher. - Vehicle must be properly maintained and in good working order.
Dump Truck	Valid Driver's License Required. Activity Hazard Analysis Review for each worker.	- Inspect daily for proper function, broken parts, loose components etc. Any equipment is found defective will be tagged, taken out of service and replaced immediately.
Chain Saw	Field workers are trained on the proper usage of a Chain Saw. Activity Hazard Analysis Review for each worker.	- Inspect ALL PPE prior to each use. Any damaged PPE will be replaced immediately.
Personal Protective Equipment (PPE)	All workers will be trained in the proper donning and use of PPE before beginning work.	- First Aid Kits will be inspected monthly for damage and/or missing items which shall be replaced immediately.
First Aid Kits	A MINIMUM of 2 individuals trained in CPR/First Aid will be on-site and available to render aid at all times.	

Competent Person

Signature

Activity/Work Task: SITE PREPERATION
Contract Name: OAZ
Contract Number: W912P918D0014

Competent Persons

Name: Signature: Date:

Meeting Attendees

Name: Signature: Date:

Appendix B

Air Monitoring Plan

Old American Zinc Plant Superfund Site
Surrounding Properties Remedial Action
(WA No. 224-RDRD-B5A1 / Contract No. EPO-S4-06-01)
Fairmont City, St. Clair County, Illinois
April 22, 2019

Arsenic, Cadmium, Lead, Zinc, and PM 10 Air Sampling Plan

Personal and perimeter air sampling will be performed during upcoming excavation activities at the surrounding residential property of the Old American Zinc Plant Superfund Site for contaminants of concern (COCs), which include arsenic, cadmium, lead, and zinc. All integrated samples will be collected and analyzed in accordance with industry standard methods by an accredited laboratory. Real-time perimeter dust monitoring shall also be performed for PM10 with conservative action levels based on maximum concentrations of contaminants (0.5 mg/m^3). The dust monitoring data will also be evaluated against the USEPA National Ambient Air Quality Standards (NAAQS) for PM10 (0.15 mg/m^3).

The contractor shall be responsible for collecting personal samples from contractor staff and performing perimeter monitoring at properties within the Residential Area and the Facility Area (FA) near the borrow material staging pile and excavated material staging pile, as required by this sampling plan, health and safety plans (owner representative's and contractor's), and any applicable federal, state, or local regulations. The contractor shall also be responsible to perform real-time dust monitoring during intrusive activities at each property and the excavated soil staging pile, beginning with excavation and continuing through backfill and topsoil placement.

Personal Air Sampling

Sampling Approach

A personal air sample will be collected for a worker with the greatest potential exposures during the excavation activities for each property during the first week of excavation activities. The intent of the personal air sampling is to document the highest risk of occupational exposure levels and verify the adequacy of the established personal protection equipment (PPE) levels. If warranted by the data, actions could range from no action, to increased personal sampling, or modifications to administrative or engineering controls and or PPE. Note that based on experience at similar projects, changes in proposed PPE levels are not anticipated. The quickest laboratory turnaround time for results shall be confirmed and used (anticipate a 24-hour laboratory turnaround).

Based on the results of the first week of personal air sampling, the sampling plan will also be reviewed to evaluate the effectiveness of the monitoring for the remainder of the field activities. If the project action level is reached for any compound, monitoring will continue using the initial sampling approach as previously described. Factors that will be considered include, but are not limited to, the following: (1) results of the first round of personal air sampling, (2) level of soil contamination anticipated in future excavations based on previous soil sampling data, (3) soil conditions (wetness) anticipated, (4) level of work activity anticipated, and (5) correlation of real-time dust monitoring (see below) with actual personal air sampling results obtained.

Sampling Method

Personal air samples will be collected in accordance with NIOSH Method 7303 or equivalents using a $0.8\text{-}\mu\text{m}$ mixed cellulose ester (MCE) membrane filter. A calibrated sampling pump will be used to draw a representative air sample from the breathing zone of the employee through the filter to collect the airborne particulate. The calibrated sampling pumps will sample within ± 5 percent of the recommended flow rate of 1 to 4 liters per minute. Tygon or other flexible tubing will be used for connecting to the pumps. Samples will be collected for an approximate 8-hour period or a full-shift period, resulting in a total air volume of approximately 960 liters using a nominal flowrate of 2 liters per minute (Lpm). Samples would be handled under standard chain-of-custody procedures for laboratory analysis.

AIR MONITORING PLANOld American Zinc Plant Superfund Site
Surrounding Properties Remedial Action
(WA No. 224-RDRD-B5A1 / Contract No. EPO-S4-06-01)
Fairmont City, St. Clair County, Illinois
April 22, 2019Perimeter Air Sampling*Sampling Approach*

Daily perimeter air samples for arsenic, cadmium, lead, and zinc will be collected at two locations per property, typically at the residence and downwind. At the FA near the borrow material staging pile and excavated material staging pile, two perimeter air samples will also be collected daily while earthwork is being performed or when the staging pile is being constructed. The sampling locations at the excavated soil staging pile will be selected to evaluate both ambient (i.e., upwind) and downwind levels. The intent of the perimeter sampling is to provide assurances that exposures outside the exclusion zone do not pose an unacceptable risk to the public or workers in the support zone. An expedited laboratory turnaround time for results shall be confirmed and used (anticipate a 2-3 day laboratory turnaround).

Sampling Method

Personal air samples will be collected in accordance with NIOSH Method 7303 or equivalents using a 0.8- μm mixed cellulose ester (MCE) membrane filter. A calibrated sampling pump will be used to draw a representative air sample through the filter to collect the airborne particulate. The calibrated sampling pumps will sample within ± 5 percent of the recommended flow rate of 1 to 4 liters per minute. Tygon or other flexible tubing will be used for connecting to the pumps. Sample collection time and volume will be in accordance with the referenced NIOSH method. Samples would be handled under standard chain-of-custody procedures for laboratory analysis.

Real-time Perimeter Dust Monitoring*Sampling Approach*

Real-time dust monitoring will be performed using MIE DataRAM 4 (DR-4000) dust monitors, or equivalent (i.e. TSI Dustrak 8530, etc.), throughout the duration of intrusive activities beginning with excavation and continuing through backfill and topsoil placement at each property and the FA excavated soil staging pile while earthwork is being performed or when the staging pile is being constructed. All dust monitors shall be protected from precipitation and other elements using an appropriate environmental enclosure (i.e. TSI Environmental Enclosure 8535 or equivalent).

Each day at the residential properties being worked on, the dust monitors will be set-up at the front door and a downwind property line location to verify effectiveness of engineering controls in minimizing dust generation that may potentially leave the exclusion zone. Additional dust monitors will be placed upwind and downwind of the FA excavated soil staging pile. Final placement and adjustment to these locations will be made at the discretion of the ARDL representative. The dust monitor measurements will be recorded every minute and contractor personnel will check readings every 30 minutes, along with a brief description of the activity taking place. Additionally, the dust monitor results will be downloaded each day so that the fluctuations in total dust concentrations can be observed.

During work hours, the dust monitor alarm will be set at $0.5 \text{ mg}/\text{m}^3$ to observe activities and determine the cause for elevated particulate concentrations and to evaluate potential mitigation measures to maintain the 24-hour average concentration below the criteria. A health and safety dust-monitoring action limit of $0.5 \text{ mg}/\text{m}^3$ was determined based on the maximum COC concentrations detected in samples during the remedial investigation and predesign sampling. Exceedances of the dust monitoring criteria require dust-abatement measures, typically application of water, or stop work and further evaluation. As previously indicated, the dust monitoring data will also be evaluated against the USEPA National Ambient Air Quality Standards (NAAQS) for PM₁₀ of $0.15 \text{ mg}/\text{m}^3$.

AIR MONITORING PLAN

Old American Zinc Plant Superfund Site
Surrounding Properties Remedial Action
(WA No. 224-RDRD-B5A1 / Contract No. EPO-S4-06-01)
Fairmont City, St. Clair County, Illinois
April 22, 2019

Notification of Personal and Perimeter Air Monitoring Results

Notification Procedures

The analytical laboratory will submit sample results directly to the contractor for each of their personnel included in this air sampling program. The contractor will comply with Occupational Safety and Health Administration standards 1910.120 and 1910.1026 regarding employee notification and recordkeeping requirement and will provide the owner's representative with a weekly summary of results and real-time notification of any exceedances.

Recordkeeping

Documentation of air monitoring and air sampling must be retained as part of the project file, which includes the following:

- Calibration and industrial hygiene sampling logs
- Instrument reading
- Weather conditions
- Sample location (breathing zone, headspace) and upwind and downwind locations at properties and the FA.
- Operator's name and signature
- Date and time of the samples, copies of chain of custody forms
- NIOSH methods used
- Laboratory analysis reports
- Copies of personnel notification of results

Submissions

File results will be submitted in Microsoft Excel 2013 readable format. File names denoting address being sampled, sample meter location (i.e., upwind or downwind), and sample date will be submitted daily.

Analytical results from personal sampling pumps will be reported in Adobe Acrobat 9.0 or compatible software. The reports will denote sample collection intervals, volumes, and addresses where personal samples were collected. The personal analytical results will be submitted monthly.

Appendix C

Personnel Listing and Training Certification

ARDL, Inc.

Certificate of Participation

This certifies that

Robert K. Dismang

*has attended and successfully completed
a course of study for*

*Hazardous Waste Operations and Emergency Response
40 Hour General Site Worker Program*



JOHN D. GLOVER, JR., CHMM
Course Director

40GSW1997-04

Certificate No.



L. V. GIBBONS, PhD
President and Laboratory Director

December 1996

Date

40GSW1997-07

December 1996

Certificate of Completion

This certifies that

Rob Dismang

has successfully completed

8 Hour HAZWOPER Supervisor Refresher Training

This certification alone does NOT indicate INITIAL 8 Hour OSHA Supervisor Training

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)(8)

And all State OSHA/EPA Regulations as well including 29 CFR 1926.65 for Construction.

This course (Version 4) is approved for 8 Contact Hours (0.8 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

190328521091

Certificate Number

3/28/2019

Issue Date

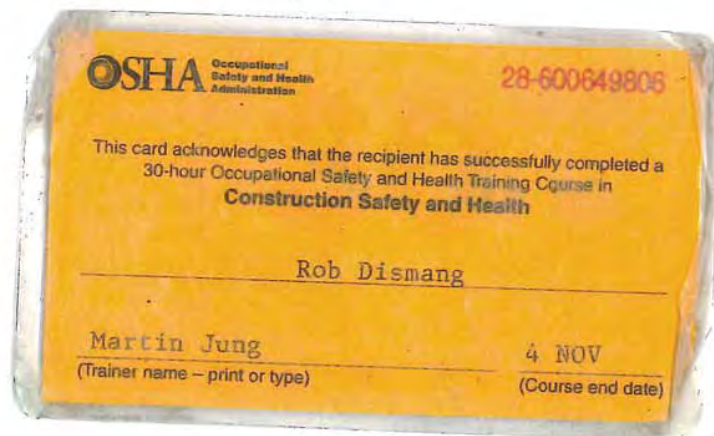


UNLIMITED, Inc.
OSHA Compliant Safety Training Since 1993

2139 Tapo St., Suite 228 Simi Valley, CA 93063
(888) 309-SAFE (7233) or 805 306-8027
<https://www.safetyunlimited.com>

Scan this code or visit www.safetyunlimited.com/v to verify certificate.

Proof of initial certification and subsequent refresher training is NOT required to take refresher training





**American
Red Cross**

Certificate of Completion

Rob Dismang

has successfully completed requirements for

Adult and Pediatric First Aid/CPR/AED - valid 2 Years

conducted by
American Red Cross

Date Completed: **01/11/2019**

Instructors: **Arthur Muller**



Certificate ID: 14YXLC

To verify, scan code or visit:
redcross.org/confirm

USACE LEARNING CENTER
HUNTSVILLE, ALABAMA



CERTIFICATE

Rob Dismang

MVM0011400108

has completed the Corps of Engineers and Naval Facility Engineering Command Training Course

CONSTRUCTION QUALITY MANAGEMENT FOR CONTRACTORS - #784

Memphis, TN	11/07/14	MVM - Memphis District	Del Warfield
Location	Training Date(s)	Instructional District/ NAVFAC	CQM-C Manager
Del Warfield	delwick.e.warfield@usace.army.mil	901-544-0660	Digitally signed by WARFIELD.DELWICK.E.1260354554 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=WARFIELD.DELWICK.E.1260354554
Facilitator/Instructor	Email	Telephone	Facilitator/Instructor Signature

Jeffrey D. Dziedzic
Chief, USACE Learning Center
Jeffrey D. Dziedzic

THIS CERTIFICATE EXPIRES FIVE YEARS FROM DATE OF ISSUE
CQM-C Recertification online course: <https://www.myuln.net>

ROB K DISMANG

PEC100406458



**IPEC IPEC
SEMS BASIC**



Training Detail

Validated Courses

Name	Date	Level	Validating Company
IPEC PEC- Basic Orientation	11/2/2013	Orientation	PEC/PREMIER SAFETY MANAGEMENT
IPEC PEC- Offshore Safety	11/2/2013	Full Training	PEC/PREMIER SAFETY MANAGEMENT
IPEC PEC- SEMS Training for Offshore Oilfield Employees	11/2/2013	Awareness Level	PEC/PREMIER SAFETY MANAGEMENT
IPEC SafeGulf Orientation	11/2/2013	Awareness Level	PEC/PREMIER SAFETY MANAGEMENT
IPEC SafeLand Orientation	11/2/2013	Awareness Level	PEC/PREMIER SAFETY MANAGEMENT

CERTIFICATE OF ATTENDANCE

This is to certify that

ROB DISMANG

participated in the

Water Well & Pump Performance
held in St Louis MO on April 2nd, 2014

CONTACT HOURS: 6.75

Approved for Missouri Operators (Drinking Water Treatment & Distribution)

Course # 1406374 – 6.5 Renewal training hours

Approved for Missouri Water Well contractors & Pump Installers 5.00 CE Hours credit

Approved for Indiana Well Drillers and Pump Installers 6.75 CEU Hours

Approved for Illinois Water Operators: Course ID 8138 (7:00 TCH)

The Illinois Department of Public Health has approved the program for 6 hours of continuing education under Section 915.80 Illinois Water Well and Pump Installation Contractor's License Code.

The program meets the annual three hour training requirements for local health department water program staff as specified in the Illinois Local Health Protection Grant Rules, Section 615.320 c) 2).

Michele Stone

Executive Director

April 2nd, 2014

Date



AMERICAN GROUND WATER TRUST

Ground Water Education Programs Since 1986

50 Pleasant Street, Suite 2, Concord, NH 03301-4073 ~ (603) 228-5444

Certificate of Completion

This certifies that

Mitchell Jenkins

Has Successfully completed

OSHA 40 Hour HAZWOPER Training

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)

And State OSHA/EPA Regulations as well including 29 CFR 1926.65(e)

This course is approved for 40 Contact Hours (4 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Training Director

101007155509

Certificate Number

10/7/2010

Issue Date



UNLIMITED, Inc.

OSHA Compliant Safety Training Since 1993

2139 Tapo St., Suite 228 Simi Valley, CA 93063
888 309-SAFE (7233) or 805 306-8027 866-869-7097 (fax)
www.safetyunlimited.com

Annual Refresher Training Required
Want to be sure this certificate is valid? Visit safetyunlimited.com/verification

Certificate of Completion

This certifies that

Mitchell Jenkins

has successfully completed

8 Hour HAZWOPER Supervisor Refresher Training

This certification alone does NOT indicate INITIAL 8 Hour OSHA Supervisor Training

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)(8)

And all State OSHA/EPA Regulations as well including 29 CFR 1926.65 for Construction.

This course (Version 4) is approved for 8 Contact Hours (0.8 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

180105555509

Certificate Number

1/5/2018

Issue Date



UNLIMITED, Inc.
OSHA Compliant Safety Training Since 1993

2139 Tapo St., Suite 228 Simi Valley, CA 93063
(888) 309-SAFE (7233) or 805 306-8027
<https://www.safetyunlimited.com>

Scan this code or visit www.safetyunlimited.com/v to verify certificate.

Proof of initial certification and subsequent refresher training is NOT required to take refresher training

AdvanceOnline Solutions Online Institute

Certificate of Completion

Mitchell Jenkins

has met the online course completion requirements for

OSHA 30-Hour Construction Safety

This student has completed the formal instruction for the 30-Hour Construction Outreach Program. Topics covered in this program were Introduction to OSHA, Managing Safety and Health, Struck and Caught Hazards, Personal Protective Equipment, Hearing Conservation, Respiratory Protection, Lead and Crystalline Silica, Asbestos, Hazard Communication, Electrical Safety, Hand and Power Tools, Fall Protection, Ladder Safety, Excavations, Scaffolds, Crane Safety, Heavy Equipment, Forklift Safety, Materials Handling, Permit-Required Confined Spaces, Fire Safety, Welding and Cutting, Concrete and Masonry, Steel Erection, and Ergonomics.

Certificate ID: 6745_1057395

Instructor: Rick Gleason

Continuing Education Units: 3.0

Date: 5/26/2015 3:38:00 PM

Time Online: 30:19:28

AdvanceOnline Solutions, Inc. has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). AdvanceOnline Solutions, Inc. is authorized by IACET to offer 3.0 CEUs for this program.



AdvanceOnline Solutions, Inc.
2400 Augusta Drive, Suite 465
Houston, Texas 77057
www.advanceonline.com
Phone: (713) 621-1100

AdvanceOnline
SOLUTIONS



USACE LEARNING CENTER
HUNTSVILLE, ALABAMA




CERTIFICATE

Mitchell Jenkins

MVM0011400109

has completed the Corps of Engineers and Naval Facility Engineering Command Training Course

CONSTRUCTION QUALITY MANAGEMENT FOR CONTRACTORS - #784

Memphis, TN	11/07/14	MVM - Memphis District	Del Warfield
Location	Training Date(s)	Instructional District/ NAVFAC	CQM-C Manager
Del Warfield	delwick.e.warfield@usace.army.mil 901-544-0661		Digitally signed by WARFIELD.DELWICK.E.1260354554 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=WARFIELD.DELWICK.E.1260354554
Facilitator/Instructor	Email	Telephone	Facilitator/Instructor Signature
			 Chief, USACE Learning Center Jeffrey D. Dziedzic

THIS CERTIFICATE EXPIRES FIVE YEARS FROM DATE OF ISSUE
CQM-C Recertification online course: <https://www.myvln.net>





Certificate of Completion

Mitchell Jenkins

has successfully completed requirements for

Adult and Pediatric First Aid/CPR/AED - valid 2 Years

conducted by
American Red Cross

Date Completed: **01/11/2019**

Instructors: **Arthur Muller**



Certificate ID: 14KO6Z

To verify, scan code or visit:
redcross.org/confirm



MIDWEST OSHA EDUCATION CENTERS



Nebraska



SCHOOL OF
PUBLIC HEALTH &
SOCIAL JUSTICE

BARTON
COMMUNITY COLLEGE

For Diligently and Successfully Completing

Specialist in Safety & Health – General Industry

this certificate is awarded to

Mitchell Jenkins

dated this 29 *day of* July, 2016

Director of OSHA Training Institute

Various MOEC Instructors

Instructor



MIDWEST OSHA EDUCATION CENTERS



Nebraska



SAINT LOUIS
UNIVERSITY
COLLEGE OF
PUBLIC HEALTH &
SOCIAL JUSTICE

BARTON
COMMUNITY COLLEGE

For Diligently and Successfully Completing

Trainer Course in OSHA Standards for the Construction Industry

OSHA 500

this certificate is awarded to

Mitchell Jenkins

Date

3/28/2017, 3/29/2017, 3/30/2017, 3/31/2017

CEUs: 2.6

Training Hours 26

Charles J. Melsa
Director of OSHA Training Institute

Christopher C. King
Director, Center for Environmental Health and Education



MIDWEST OSHA EDUCATION CENTERS



Nebraska



SAINT LOUIS
UNIVERSITY
COLLEGE FOR
PUBLIC HEALTH &
SOCIAL JUSTICE

BARTON
COMMUNITY COLLEGE

For Diligently and Successfully Completing

OSHA Standards for the Construction Industry

OSHA 510

this certificate is awarded to

Mitchell Jenkins

Date

6/21/2016, 6/22/2016, 6/23/2016, 6/24/2016

CEUs: 2.6

Training Hours 26

Charles J. Melcher

Director of OSHA Training Institute

Christopher C. King

Director, Center for Environmental Health and Education



For Diligently and Successfully Completing

OSHA Standards for General Industry
OSHA 511

this certificate is awarded to

Mitchell Jenkins

Date

7/12/2016, 7/13/2016, 7/14/2016, 7/15/2016

CEUs: 2.6

Training Hours 26

Charles J. Shields
Director of OSHA Training Institute

Christopher C. King
Director, Center for Environmental Health and Education



For Diligently and Successfully Completing

Hazardous Materials Regulations

OSHA 2015

this certificate is awarded to

Mitchell Jenkins

Date

7/26/2016, 7/27/2016, 7/28/2016, 7/29/2016

CEUs: 2.6

Training Hours 26

Charles J. Wells
Director of OSHA Training Institute

Christopher C. King
Director, Center for Environmental Health and Education



**EDUCATION
CENTERS**

MIDWEST OSHA EDUCATION CENTERS



Nebraska



BARTON
COMMUNITY COLLEGE

For Diligently and Successfully Completing

OSHA Guide to Industrial Hygiene

OSHA 521

this certificate is awarded to

Mitchell Jenkins

Date

7/5/2016, 7/6/2016, 7/7/2016, 7/8/2016

CEUs: 2.6

Training Hours

26

Charles J. Mello

Director of OSHA Training Institute

Christopher C. King

Director, Center for Environmental Health and Education

Certificate of Completion

This certifies that

Mitchell Jenkins

has successfully completed

Confined Space Awareness Training

In Accordance With Federal OSHA Regulation 29 CFR 1910.146(g)

And all State OSHA and EPA Regulations As Well

This course is approved for 1 Contact Hour (0.1 CEU) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

1407163055509

Certificate Number

7/16/2014

Issue Date



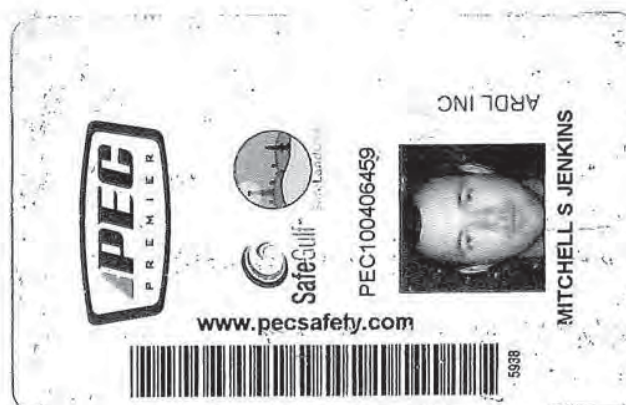
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OSHA Compliant Safety Training Since 1993

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<https://www.safetyunlimited.com>

Scan this code or visit www.safetyunlimited.com/v to verify certificate.

Not for Confined Space Entry



Certificate of Completion

This certifies that

Chris L. Creps

has successfully completed

OSHA 40 Hour HAZWOPER Training

Annual Refresher Training Required

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)

And State OSHA/EPA Regulations as well including 29 CFR 1926.65(e)

This course is approved for 40 Contact Hours (4 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

1903281278330

Certificate Number

3/28/2019

Issue Date



SAFETY UNLIMITED, Inc.
OSHA Compliant Safety Training Since 1993

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Annual Refresher Training Required

Certificate of Completion

This certifies that

Chris L. Creps

has successfully completed

8 Hour HAZWOPER Supervisor Training

This certificate does not in itself indicate initial 24 or 40 Hour HAZWOPER Training

In Accordance With Federal OSHA Regulation 29 CFR 1910.120(e)(4)

And all State OSHA/EPA Regulations as well including 29 CFR 1926.65 for Construction.

This course is approved for 8 Contact Hours (0.8 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044)

Julius P. Griggs

Julius P. Griggs
Instructor #892

1903294278330

Certificate Number

3/29/2019

Issue Date



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Annual Refresher Training NOT Required

OEC1030-7049088



This card certifies that:
CHRIS CREPS

has completed a 30-Hour OSHA Hazard Recognition Training
for the Construction Industry.

Director: Jeffrey Pairan

Trainer: Taylor Sikes

04/03/2018
Grad. Date:

Chris Creps
is hereby authorized as:
First Aid/CPR/AED (Adult)
Level 1 - Instructor

MIC532 2663214 11/02/2020
Training Center ID Registry No. Expiration Date

541-294-3898
800-447-3177
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2	Bloodborne Pathogens; Oxygen First Aid for Emergencies; CarePlus CPR and AED; Child/Infant CPR and AED Supplement	—
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Training programs conform to 2015 CPR, ECC, and First Aid Guidelines.
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Appendix D

Logs and Reports

PRINTED NAME: _____



SITE SPECIFIC TRAINING Completion Record

Site-Specific Training has been completed for:

Participant Name

Course given by _____
Instructor Name

For work related to _____
Project Name

SIGNATURE: _____ DATE: _____

PRINTED NAME: _____



LEAD AWARENESS TRAINING Completion Record

1. I have been informed about the health hazards associated with lead exposure.
2. I have been informed about the work activities that may result in lead exposure and the necessary steps to prevent and protect against exposure, including engineering controls and safe work practices.
3. I understand the proper selection, use, and limitations of the respirators and protective equipment that are required for this project.
4. I understand that good housekeeping and personal hygiene practices are to prevent exposure to others.
5. I have been informed about the medical surveillance requirements associated with this project.
6. I have been trained on and signed the Site-Specific Health and Safety Plan which complies with the requirements of Federal OSHA's Lead Construction Standard for this project.
7. I have been informed of the contents of Federal OSHA's Lead Construction Standard 29 CFR 1926.62.
8. I understand that chelating agents should not be routinely used to treat lead exposures.

SIGNATURE: _____ DATE: _____



U.S. Army Corps of Engineers Safety Inspection Checklist Earth Moving Equipment

Location (Plant or Facility)	Contract Number
Contractor Name	Project Name
Inspector Name (Print)	Inspector Signature

This checklist serves as a guide only, it does not replace or eliminate the need to comply with the requirements set forth in Engineering Manual 385-1-1, Safety and Health Requirements Manual, dated 15 September 2008. The references included in this checklist correspond to the applicable sections of EM 385-1-1.

Item Description	REF	Yes	No	N/A	Remarks (Any NO or N/A item)
1. Has the unit been inspected by a qualified mechanic and found to be in safe operating condition prior to being put into service?	18.A.03				
2. Is the unit equipped with a suitable CO ₂ or dry chemical fire extinguisher rated 10-B.C.?	18.G.23				
3. Have all broken windows been replaced?	18.G.09				
4. Is a safe means of access to the cab provided (steps, grab bars, non-slip surfaces)?	18.G.09				
5. Is the operator protected against falling or flying objects?	18.B.11				
6. Are seat belts provided and worn by operators?	18.B.09				
7. Are sufficient headlights and taillights provided for night operations?	18.G.09				
8. Are FOPS provided when an operator is exposed to falling overhead hazards?	18.B.12				
9. Have brakes been tested and found satisfactory?	18.G.09				
10. Does the unit have an emergency brake system?	18.G.09				
11. Is the unit equipped with windshield wipers, defrosting and defogging equipment in good operating condition?	18.G.09				
12. Is there a fully operational reverse signal backup alarm installed on the unit?	18.B.01				
13. Are only designated and qualified operators assigned to operate the equipment?	18.G.06				
14. Are fuel tanks located in a manner to prevent spills or overflows from running onto engine, exhaust, or electrical equipment?	18.B.05				

CESO Checklist 18-02, Oct 10

U.S. Army Corps of Engineers Safety Inspection Checklist Earth Moving Equipment

Item Description	REF	Yes	No	N/A	Remarks (Any NO or N/A item)
15. Are moving parts, belts, gears, shafts, pulleys, sprockets, flywheels, etc. guarded when exposed to contact by personnel?	18.B.03				
16. Are exhaust discharges from equipment so directed that they do not endanger persons or obstruct the view of the operator?	18.B.06				
17. Is protection against contact with hot surfaces, exhaust, etc. provided?	18.B.03				
18. Is the horn in good operating condition?	18.G.09				

Other Remarks



Contractors / Visitors Attendance Log

Project: _____ Location: _____

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Appendix E

Lead Awareness Program

Lead Awareness And Protection Program

For

ARDL Inc.

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LEAD AWARENESS AND PROTECTION PROGRAM

9. PURPOSE

- A. The purpose of ARDL's Lead Awareness and Protection Program is to ensure that all personnel who may have potential of exposure to lead have the ability to recognize, evaluate and control the lead hazard.
- B. Inform all personnel who may have potential exposure how to effectively reduce their risk by using appropriate work practices and personal protective equipment.
- C. Outline regulations to prevent potential environmental contamination with lead from any construction activities
- D. Educate personnel of the potential health risks associated with exposure to lead in the workplace.

1. REGULATORY REFERENCES

- 1. OSHA 29 CFR 1910.1025, including Appendices A, B, C, D: Lead in General Industry
- 2. OSHA 29 CFR 1926.62: Lead in Construction Industries
- 3. EPA 40 CFR, Part 745, Lead-based paint poisoning prevention, including Sub-Parts D, E, F, and L

1. DEFINITIONS

A. Action Level (AL)

- i. The personnel exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30ug/m³) calculated as 8-hour time-weighted average (TWA).
- ii. At this minimal level of exposure, initial actions shall be initiated, such as medical monitoring and training.

B. Administrative Controls

- i. Includes the use of management involvement, training of personnel, rotation of workers, air sampling, and medical monitoring to protect individuals.

C. Competent Person

- i. The person who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

D. Engineering Controls

- i. Process change, substitution, isolation, ventilation and source modification to reduce work-related exposures.

E. Lead

- i. Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

F. Permissible Exposure Limit (PEL)

- i. In accordance with OSHA 29 CFR 1910.1025, the PEL is 50 micrograms per cubic meter (50 ug/m³) of air averaged over an 8-hour period.
- ii. Personnel shall not be exposed above the PEL for lead averaged over an 8-hour period.

G. Personal Protective Equipment (PPE)

- i. Personal protective equipment includes equipment designed to protect individuals from hazards and includes head, face, eye, foot, ear, and respiratory protection.

1. PROGRAM RESPONSIBILITIES

A. ARDL Inc. SAFETY DEPARTMENT

- i. Provide and maintain a procedure that meets the intent of the OSHA Standards 29 CFR 1910.1025 and 29 CFR 1926.62, and provide notification to personnel and technical assistance in the implementation of this procedure.

B. SUPERVISORS

- i. Supervisors will be responsible for identifying potential personnel exposures to lead, developing standard operating procedures for routine work to comply with the written program, schedule air monitoring with the Safety Department, scheduling personnel for

necessary medical testing and informing the Safety Department of personnel health concerns with potential exposures to lead.

C. CUSTOMER/MANAGEMENT

- i. ARDL customers must be compliant with OSHA Regulations. They are responsible for ensuring that our personnel are trained and knowledgeable of the hazards and of the requirements their facility.

D. PERSONNEL

- i. Personnel will be responsible for complying with procedures established by their supervisors to minimize potential lead exposure and inform their supervisor if they have health concerns that may be pertinent to lead exposure so the supervisor can arrange for appropriate consultations for the issue.

22. GENERAL HAZARDS

- A. It is known that overexposure to lead can have serious and deadly effects on health.
- B. Lead exposure can occur not just from skin contact but from breathing in excessive amounts of lead dust or fumes. Additionally, there is a risk of swallowing lead if a person touches food, cigarettes, cosmetics, etc., when their hands are contaminated by lead.
- C. Lead-based paint and paint debris are a key hazard when painting, repainting, rehabbing, demolishing, or renovating buildings, tanks, bridges, etc. Lead bricks, mortar and sheets, lead support rods and construction materials, mineral wool insulation with lead contaminants, lead pipes, lead solder and leaded steel roofing materials are potential hazards when involved in renovation, re-insulation, industrial vacuuming, etc.
- D. There's also a risk of hazardous exposure in any work environment that makes or uses products that contain lead.
- E. Personnel will not disturb lead containing material when it is encountered on a job site.
- F. A single large incident of lead exposure (for example, children ingesting large amounts of lead-based paint) can result in almost immediate effects by

causing seizures, coma and, and potential death.

- G. Most adverse physical effects, however, are slower to materialize. As lead enters the body, it is absorbed into the bloodstream, migrating to internal organs and body tissues. If the body takes in more lead than it can naturally eliminate, the lead builds up and, over time, can cause severe and irreversible damage to the blood and blood-forming organs, as well as, the body's nervous, urinary, and reproductive systems. Key medical facts are:
- Lead is a cumulative toxicant that affects multiple body systems and is particularly harmful to young children.
 - Lead in the body is distributed to the brain, liver, kidney and bones. It is stored in the teeth and bones, where it accumulates over time.
 - Human exposure is usually assessed through the measurement of lead in blood.
 - Lead in bone is released into blood during pregnancy and becomes a source of exposure to the developing fetus.
 - There is no known level of lead exposure that is considered safe.
 - Lead poisoning is entirely preventable.
- H. The milder short-term effects of overexposure to lead can include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, tremors, numbness, dizziness, hyperactivity, and stomach pain. If you work with or around lead and have any of these symptoms, it's crucial that personnel report them immediately. That's because chronic overexposure to lead can cause much more serious problems that rarely show symptoms until it's too late to reverse them.

1. SYMPTOMS OF CHRONIC OVEREXPOSURE TO LEAD

- A. Anemia - Defined as a decrease in the blood's capacity to carry oxygen, which can make you weak and tired.
- B. Nervous System Damage - Sometimes temporary, but in the worst cases can lead to severe, or even fatal, brain damage. The symptoms of lead-caused nervous system damage can be vomiting, poor memory, restlessness, irritability, tremors, convulsions, muscular weakness, and a

feeling of dullness progressing to drowsiness and stupor. It's important to report any of these symptoms if an personnel has been exposed to lead. In the worst cases, people may have seizures, go into a coma, and even die.

- C. Kidney Disease - Typically, urinary problems and other symptoms of lead-related kidney disease don't usually show up until kidney damage has become significant and usually permanent.
- D. Reproductive Impairment - Lead presents a risk to the reproductive systems of both men and women. Lead exposure may decrease women's fertility and cause abnormal menstrual cycles. For men, lead overexposure may decrease the sex drive or cause impotence or sterility. One of the worst hazards of lead exposure is the danger it poses to both men and women who plan to have children. Women who are pregnant, or of child-bearing age, should avoid long-term exposure to lead. If either parent has been overexposed to lead, there is an increased risk of miscarriage or stillbirth. Any child born to a parent exposed to high lead levels is more likely to have birth defects, mental retardation, behavioral disorders, and suffer from an increased risk of death during their first year of life.

1. OSHA REGULATIONS

- A. Due to the hazardous nature of lead, OSHA has a detailed regulation (29 CFR 1910.1025) designed to identify hazardous work and to reduce exposure. As noted earlier, work on old structures or equipment can pose high exposure risks. Therefore, OSHA has created rules and regulations outlined in 29 CFR 1926.62 to protect construction workers from risk.
- B. The regulations set a permissible exposure limit (PEL) of a time-weighted average of 50 micrograms of lead per cubic meter of air. That is the highest level of lead in the air to which an personnel can be exposed over an eight-hour workday.
 - i. Short-term exposures above the PEL are permitted as long as the workday average stays within the regulated limit.
- C. OSHA states in its regulation, however, that an exposure level below 40 micrograms is desirable. For those who intend to have children, OSHA recommends keeping exposure below 30.
- D. OSHA's separate regulation for lead exposure in construction applies to all jobs that might have employment-related exposure to metallic lead, inorganic lead compounds, and organic lead soaps.

- E. OSHA specifically mentions the risk of exposure when work involves:
- i. Demolition or salvage of structures with lead or lead-containing materials.
 - ii. Removal or encapsulation of materials containing lead.
 - iii. Construction, alteration, repair or renovation of structures, substrates or portions thereof that contain lead or lead-containing materials.
 - iv. Installation of products containing lead.
 - v. Lead contamination/emergency cleanup.
 - vi. Transportation, disposal, storage, or containment of lead or lead-containing materials at the construction site.
 - vii. Maintenance operations associated with these construction activities.
- F. For both construction and general industry, OSHA sets not just a permissible exposure limit, but what it calls an action level for lead. If personnel are exposed to 30 micrograms of lead in the air over an eight-hour day, without wearing a respirator, employers must meet various OSHA regulatory requirements. These include:
- i. Monitoring the air around affected personnel to determine lead levels.
 - ii. Giving blood tests to affected personnel to determine blood lead levels.
 - iii. Providing a thorough medical exam before assigning an personnel to a lead-containing area.
 - iv. Initiating efforts to reduce personnel exposure.
- G. The frequency of air monitoring and blood tests varies depending on the levels of lead in the work area and the results of previous blood tests. For instance, employers must take air samples every three months to monitor the exposure of personnel who work in areas where lead is at or above the PEL.
- H. If exposure is at or above the action level 30 or more days per year, affected personnel's blood must be tested for lead at least every six months.

- I. If blood tests show that the personnel has $>$ or $=$ 40 micrograms of lead per 100 grams of whole blood, he or she should submit to a blood test every two months as well as a very detailed medical exam at least annually.
- J. The blood sampling & monitoring should be conducted every six (6) months until two consecutive blood samples & analysis are acceptable. The sampling & monitoring should be performed at least monthly during the removal period. Any personnel with elevated blood levels should be temporarily removed. Personnel should be notified in writing within five days when lead levels are not acceptable. The standard requires temporary medical removal with Medical Removal Protection benefits.
- K. A medical surveillance program is available for all personnel who are or may be exposed above the action level for more than thirty (30) days. Medical examinations & procedures shall be performed by or under the supervision of a licensed physician. The medical surveillance is provided without cost to the personnel. If the initial determination or subsequent air monitoring reveals personnel exposure to be at or above the action level but below the permissible exposure limit the employer shall repeat air monitoring in accordance with this paragraph at least every six (6) months. The employer shall continue air monitoring at the required frequency until at least two consecutive measurements, taken at least seven (7) days apart, are below the action level at which time the employer may discontinue monitoring for that personnel.
- L. Affected personnel shall be notified of the results of any monitoring performed within fifteen (15) working days, either individually in writing or by posting the results in an appropriate location that is accessible to affected personnel. Whenever the results indicate that the representative personnel exposure, without regard to respirators, exceeds the permissible exposure limit, in the written notice shall be included a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.
- M. Typically, construction workers tend to perform shorter-term projects with potentially higher levels of lead exposure. As a result, OSHA may require more frequent blood testing for certain classifications of workers.
- N. OSHA requires a medical exam for any personnel who works around lead and:

- i. Has symptoms associated with lead exposure and/or;
 - ii. Has trouble breathing during a respirator fit test.
- O. OSHA requires personnel to be temporarily removed from any situation work-related involving lead exposure when:
 - i. Use of engineering controls, protective clothing, respirators, etc. can't bring the blood lead levels down.
 - ii. Blood lead levels average at or above 50 micrograms per 100 grams of whole blood in a series of tests.
 - iii. A medical exam places the personnel at increased risk of "material impairment of health" due to lead exposure.
- P. Removal of personnel from a project due to potential lead exposure may be necessary. OSHA regulations do require that the affected personnel retain their pay levels, seniority, and benefits. Once blood levels reach the safety zone, exposed workers can return to their jobs. Close monitoring and testing must continue.

1. TRAINING

- A. ARDL will provide training to or require documentation that subcontractors have provided the requisite training to ensure that all project personnel acquire an understanding of the kinds of monitoring, testing, and protective measures required by OSHA's lead regulations. These standards are designed to protect anyone who could be exposed to lead from suffering serious health consequences.
- B. All personnel who have a reasonable potential for exposure to airborne lead above the OSHA Allowable Limit shall receive training.
- C. The training shall be performed prior to initial assignment and shall be repeated annually.
- D. D. The training shall include:
 - i. the content of the lead standard;
 - ii. the sources and types of exposure to lead in their workplace;

- iii. personal protective equipment use;
- iv. health hazards of lead;
- v. respirator use;
- vi. medical surveillance; and
- vii. appropriate engineering controls and work practices.

E. Documentation will be kept in the personnel safety training file.

1. COMPLIANCE PLAN

- A. Construction industry employers must also have a written compliance plan before they start projects where personnel exposure to lead, without respirators, will exceed the PEL. These plans are required to:
 - i. Describe the activities that emit lead.
 - ii. Document the lead emissions.
 - iii. Explain the engineering and administrative controls, work practices, PPE, etc. that will be used to reduce exposure and protect personnel.
- B. The plan, which is required to be updated annually, must also provide for frequent and regular inspections of job sites, materials and equipment by person(s) who know how to identify lead hazards and are authorized to take prompt corrective measures to eliminate them.

24. POSTED WARNING SIGNS

- A. To make sure that all on-site construction personnel are aware they are entering areas where lead exposure exceeds the PEL, warning signs shall be posted. Personnel must abide by any posted signs, labels, or assessment reports indicating the presence of lead containing materials. OSHA also requires these areas to be clearly labeled with signs that say:
- B. Other Information or Warning Signs may include:

**OVEREXPOSURE TO LEAD CAN CAUSE
SERIOUS HEALTH PROBLEMS
INCLUDING:**

- Kidney disease
- Nervous system damage



- Reproductive difficulties

PRACTICE GOOD HYGIENE!

Don't keep food, beverages, tobacco products, or cosmetics in lead containing work areas.
Don't handle food, beverages, tobacco products, contact lenses, or cosmetics until you've washed thoroughly.

1. VENTILATION - ENGINEERING CONTROLS

- A. Ventilation is one common protection against overexposure to airborne lead. It may be provided by a mechanical system used with enclosures or in containment situations. Other options may include local portable ventilation systems or shrouded tools with ventilation.
- B. OSHA requires that when ventilation is used to control exposure, employers must measure the ventilation system's effectiveness at least every three months.

1. ADMINISTRATIVE CONTROLS

A. JOB ROTATION

- i. One way to reduce lead exposure is to practice rotation of assignments to reduce the exposure of each individual to lead.
- ii. Implementation of administrative controls requires employers to keep records documenting who is rotated, where, when, and duration of exposure.

1. PERSONAL PROTECTIVE EQUIPMENT (PPE)

A. RESPIRATORS

- i. OSHA requires the use of personal protective clothing and equipment, including respirators, in an effort to keep an individual's exposure to lead at a safe level.

- ii. Respirators are required when ventilation, job rotation, and other engineering and administrative controls aren't enough to reduce lead exposure below the PEL.
 - 1. OSHA also gives personnel the right to request a respirator even if lead levels aren't high enough to require one.
- iii. OSHA explains just what types of respirators must be used to provide the needed level of protection for different tasks. In addition, the agency requires employers to train personnel to select and use respirators and to conduct fit testing programs. It is essential that the respirator fit properly to make sure that it won't let contaminated air in. The regulation, which recognizes that not everyone can work effectively while wearing a respirator, goes into more detail on respirator fit testing and selection.
- iv. Because construction-related tasks tend to be relatively short-term and create high lead levels, OSHA assumes that respirators will be needed for many tasks.
- v. The lead regulation for construction breaks jobs down into three respirator-type categories, based on the level of exposure associated with each type of job. Unless testing has proved otherwise, employers must assume that these tasks generate sufficient lead levels to require respiratory protection.
- iv. In addition, personnel must also be provided with other types of protection, including:
 - a. Personal Protective Equipment (PPE),
 - b. change areas,
 - c. hand washing facilities,
 - d. training, and
 - e. blood tests.
- vii. A half-mask air-purifying respirator is required when performing tasks with the lowest levels of lead exposure above the PEL. These tasks include:

1. Using a sledgehammer or similar tool to manually demolish walls or other building components coated with lead-based paint.
 2. Manual scraping and sanding of a surface with lead-based paint.
 3. Using a heat gun to melt lead paint on a surface prior to scraping.
 4. General cleanup in lead containing areas.
 5. Removing dirt, scale or paint from structures with lead-based paint using power tools with dust collection systems. These tools might include grinders, brushes, needle guns, or sanders.
 6. Spray painting.
- viii. A powered air-purifying respirator is OSHA's choice for tasks with the next highest levels of lead exposure. These include:
1. Repainting, repairing or relining high-pressure acid tanks lined with specialized tile or lead brick held in place with lead-containing mortar or grout.
 1. Lead turning that uses torch melting or fusing of lead or alloyed lead to another lead object.
 1. Removing dirt, scale, or paint from lead-based painted structures with power tools that don't have dust collection systems.
 1. Cleaning up after blasting with dry expendable abrasives on structures with lead-based paint.
 1. Moving or removing the enclosures within which abrasive blasting is performed. These enclosures usually have quite a bit of lead residue.
- ix. A supplied-respirator is needed for the jobs that risk exposure to especially high levels of lead in the air. They include:

1. Abrasive blasting with sand, steel grit, steel shot, aluminum oxide etc.
1. Using an acetylene torch or arc welder to weld, cut, or burn on steel structures whose coatings or paint contain lead.
- x. Respirators are a crucial part of personnel protection when they work in areas with high lead levels. No matter what type of work personnel do, OSHA says that they can change a respirator's filter elements any time they have an increase in breathing resistance. Personnel can also leave the work area to wash their face and respirator face piece whenever necessary to prevent skin irritation.

A. CLOTHING

- i. A respirator isn't the only protection personnel is given in a work area with lead exposure above the PEL. OSHA also requires employers to provide protective clothing at least weekly - and personnel are required to wear it. In areas with exposure more than four times the PEL without a respirator, personnel will get clean protective clothing daily. In any case, protective clothing may include:
 1. Coveralls or similar clothing.
 2. Gloves, hats, shoes or disposable shoe covers.
 3. Face shields, vented goggles, or other appropriate protective equipment.
- ii. To ensure the protective clothing does its job and doesn't create other problems, employers must repair, replace, clean, launder and dispose of protective clothing in a way that doesn't spread the lead contamination around.
- iii. Gloves, hats, vented goggles, shoes or disposable shoe covers shall be provided. Protective clothing shall be cleaned and laundered at least weekly. Clothing shall also be properly disposed and repaired or replaced as necessary.
- iv. An explanation of lead hazards must also be provided to those responsible for cleaning or laundering the protective clothing. In

addition, disposal or laundry containers must be labeled:

- iv. CAUTION: WHEN CLOTHING IS CONTAMINATED WITH LEAD, DO NOT REMOVE DUST BY BLOWING OR SHAKING. DISPOSE OF LEAD-CONTAMINATED WASH WATER IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

1. SAFETY PROCEDURES

- A. Even though federal and state regulations regarding overexposure to lead provide a variety of protections, all personnel must also do his or her part to reduce the chances of developing lead-related health problems.

B. WEAR REQUISITE PPE

- i. Personnel must use the respirators and protective clothing that are assigned to them.
- ii. Employer shall provide the specified PPE to personnel at no extra cost.
- iii. Personnel are to check that they are in good condition prior to each use. At the end of each shift, personnel shall remove all protective clothing and PPE according to regulations to prevent the spread of contamination.

C. GOOD HYGIENE

- i. Never take food, beverages, tobacco products or cosmetics into work areas with lead exposure at or above the PEL. In addition, personnel must wash carefully before handling any of those items.
- ii. To further reduce the possibility of spreading lead contamination, the employer shall provide showers, change rooms, and lunchrooms for workers exposed to airborne lead above the PEL.
 - 1. Personnel are to use these facilities. In other words, when working with lead, personnel are not to just sit down in the work area and eat lunch.
 - 2. At the end of the shift, personnel are not to just change clothes and go home.

- iii. At the start of the lunch break, personnel must wash their hands and face, remove contaminated work clothing or have it vacuumed or cleaned of surface dust.
 - 1. Never remove lead from protective clothing by blowing or shaking. That would just put more lead dust into the air.
- iv. Once personnel have cleaned up, they may then go to a designated area to have lunch.
 - ii. At the end of the shift, personnel must remove their contaminated work clothing according to the specified regulations, shower, and leave the work clothing in the changing room.
 - 1. In the changing room, clothing and personal clothing are to be stored in separate areas so they don't take lead dust home with them.

1. GOOD HOUSEKEEPING

- A. OSHA standards mandate that all surfaces be maintained as free as practicable of accumulations of lead.
- B. OSHA recommends the use of vacuums with HEPA filters to clean up floors or other surfaces.
- C. Personnel should not use compressed air.
- D. Personnel should not shovel, brush, or use dry sweeping unless vacuuming or wet sweeping has been tried and found not to work well.

1. SUMMARY

- A. It's up to every individual to take possible lead exposure seriously by investing in and following this Lead Awareness Plan.
- B. Personnel should not ignore any symptoms that could indicate health problems related to working with lead.
- C. Personnel need to be attentive to physical symptoms and to report them immediately to their employer so the company can investigate the problem and do everything possible to prevent dangerous lead exposure and its effects on the personnel's health.



**ENVIRONMENTAL
RESTORATION, LLC**

**Site Health and Safety Plan
Old American Zinc Plant Superfund Site**

SITE HEALTH AND SAFETY PLAN

**Old American Zinc Plant Superfund Site
Fairmont City, Illinois**

Prepared for

**ARDL Inc.
400 Aviation Drive
Mt. Vernon, IL 62864**

**Under Contract No.: W912P918D0014
Task Order: W912P919F0060**

June 2019



**Environmental Restoration LLC
1666 Fabick Drive
St. Louis, MO 63026**



**ENVIRONMENTAL
RESTORATION, LLC**

**Site Health and Safety Plan
Old American Zinc Plant Superfund Site**

SITE HEALTH AND SAFETY PLAN

**Old American Zinc Plant Superfund Site
Fairmont City, Illinois**

I hereby certify that the enclosed Site Health and Safety Plan, shown and marked in this submittal, has been prepared in accordance with OSHA 29 CFR 1910 and is proposed to be incorporated with Contract No.: W912P918D0014, Task Order #: W912P919F0060. This Site Health and Safety Plan is submitted for ARDL Inc. review and acceptance.

Plan Approval:

636.208.6660

James Christopher	Date	Phone Number
Response Manager		
Environmental Restoration LLC		

Plan Preparer:

314.749.2290

	Date	Phone Number
Nick Michailides		
Project Health and Safety Manager		
Environmental Restoration LLC		

Plan Review:

Phone Number

Rob Dismang	Date	Phone Number
ARDL Senior Program Manager		

Plan Review:

Phone Number

Chris Creps	Date	Phone Number
ARDL Site Safety and Health Officer		

Accepted as a submittal:

Phone Number

Pedro Rosario González	Date	Phone Number
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LIST OF ACRONYMS AND ABBREVIATIONS

AHA	Activity Hazard Analysis
ANSI	American National Standards Institute
BBP	Bloodborne Pathogens
COC	contaminant of concern
CFR	Code of Federal Regulations
CPR	Cardiopulmonary Resuscitation
CRZ	Contamination Reduction Zone
CSP	Certified Safety Professional
dBA	decibel A-weighted
EZ	Exclusion Zone
HASP	Site Health and Safety Plan
HAZWOPER	Hazardous Waste Operation and Emergency Response
HSO	Site Health and Safety Officer
IDLH	immediately dangerous to life and health
kV	Kilovolt
LOTOTO	Lockout/Tagout/Tryout
MCL	Maximum Contaminant Level
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
mg/m³	milligrams per cubic meter
NFPA	National Fire Prevention Association
NIOSH	National Institute of Occupational, Safety and Health
OSHA	Occupational Safety and Health Administration
PM	Response Manager
PEL	Permissible Exposure Limit
PPE	personal protective equipment
ppm	parts per million
RM	Response Manager
SCBA	self-contained breathing apparatus
SDS	Safety Data Sheet
SOP	Standard Operating Procedure
SOW	Scope of Work



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1.0 Introduction and Site Entry Requirements

This document describes the health and safety guidelines developed for the Old American Zinc Plant Superfund Site, to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation. Specific requirements will be revised when new information is received, or conditions change. A written amendment will document all changes made to the plan. Any amendments to this plan will be included in Attachment A. Where appropriate, specific OSHA and standards or other guidance will be cited and applied.

All work practices and procedures implemented on site must be designated to minimize worker contact with hazardous materials and to reduce the possibility of physical injury. All work will be performed in accordance with applicable Federal 29 CFR 1910 and 1926 health and safety regulations, specifically 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response.

1.1 Safety Policy Statement

Environmental Restoration LLC places primary importance on the health and safety of each individual of this company. We will maintain a health and safety program that encompasses all regulatory requirements as well as corporate standards that will ensure a safe work environment. To be successful, such a program must embody the proper attitudes toward injury and illness prevention on the part of supervisors and employees. It also requires cooperation in all safety and health matters, not only between supervisor and employee, but also between each employee and his or her co-workers. Only through such a cooperative effort can a safety program be in the best interest of all.

As a condition of employment, employees are required to work safely, observe safety rules and practices, and follow the instructions of their supervisors. Employees should be alert to unsafe conditions and promptly report them to their supervisors. Employees must be qualified to perform work assignments safely and notify their supervisor when they are not qualified or do not understand the assignment. Violating safe work procedures or failing to report work hazards, incidents, injury, or illness may be cause for disciplinary action, including termination.

Eliminating or controlling hazards is one-way incident prevention will be provided. This will be accomplished through the use of engineering controls, safe work practices and personal protective equipment. Environmental Restoration LLC employees will be thoroughly trained in the above areas.

It is the responsibility of supervisors to ensure that safe work procedures, equipment, and resources are provided to employees and that information on hazards and protective measures are communicated through training and other methods.

Environmental Restoration LLC will comply with all applicable safety and environmental regulations and codes. Accepted safe work practices will be followed in all operations. Site specific safety rules and procedures will be established and followed for each project in response to site specific contaminants, physical conditions and scope of work.

1.2 Daily Safety Meetings

Daily safety meetings will be held at the start of each shift. They are used to communicate daily activities, site conditions, hazards, and control measures, as well as to solicit input from site workers on safety concerns and improvements. The meetings may also be used to present safety training topics and refresher items. A Daily Toolbox Safety Meeting Record shall document items discussed and be signed by all personnel in attendance.

1.3 Site Specific Training and Acknowledgement

The Response Manager shall be responsible for informing all individuals assigned to this project of the contents of this plan and ensuring that each person signs the Site Specific Training Record in Attachment Z. By signing the Site Specific Training Record, individuals acknowledge receipt of this training and that they recognize the potential hazards present on-site and the policies and procedures required to reduce the risk of exposure or adverse effects associated with these hazards.


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1.4 Key Personnel

Project: Old American Zinc Plant Superfund Site	
Key Personnel	
Names and Titles	Contact Information
Pedro Rosario González – U.S. Corps of Engineers Representative	(Mobile) 314-250-5603 Email: Pedro.A.Rosario-Gonzalez@usace.army.mil
James Christopher – ER Response Manager	(Mobile) 636-208-6660 Email: j.christopher@erllc.com
James Christopher – ER Site Health and Safety Officer	(Mobile) 636-208-6660 Email: j.christopher@erllc.com
Nick Michailides – ER Project Health & Safety Manager	(Mobile) 314-749-2290 Email: n.michailides@erllc.com
Rob Dismang – ARDL Senior Program Manager	(Mobile) 618-231-3740 Email: rdismang@ardlinc.com
Michell Jenkins – ARDL Project Manager/Superintendent	(Mobile) 618-316-8114 Email: mjenkins@ardlinc.com
Chris Creps – ARDL Site Safety and Health Officer	(Mobile) 618-731-2044 Email: ccreps@ardlinc.com

2.0 Roles and Responsibilities
2.1 Response Manager (PM): James Christopher

The Response Manager, as the field representative for, Environmental Restoration LLC (ER) and its subcontractors, has the responsibility for implementing the site Health and Safety Plan (HASP). The RM shall manage the project and ensure all health and safety requirements are met.

2.2 Site Health and Safety Officer (HSO): James Christopher

The ER Site Health and Safety Officer is assigned to the site on a full-time basis with functional responsibility for assisting the PM with implementation of the HASP.

Specific Duties Include:

- Assist RM in providing a safe and healthful work environment.
- Assist RM in reporting and investigating all incidents.
- Assist RM in documenting and correcting safety issues/concerns.
- Ensure site personnel meet required training and medical clearance.
- Ensure proper decontamination of personnel and equipment is accomplished.
- Ensure that air monitoring equipment is calibrated and operational.
- Conduct personal air monitoring as required.
- Conduct fugitive dust monitoring as required.
- Perform respirator fit tests, as necessary.
- Inventory and inspect PPE prior to personnel entries into exclusion zone.
- Ensure proper personal protective equipment is being utilized.
- Inspect first aid kits and fire extinguishers.
- Supervise confined space entries.



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2.3 Project Health and Safety Manager (PHSM): Nick Michailides

The Project Health and Safety Manager provides support and leadership to the project to protect the health and safety of the employees and the public. This includes, but is not limited to, communicating on safety and health issues, providing training, establishing special hazard control programs, assisting or conducting incident investigations, making inspections and surveys, evaluating or developing new protective measures, accumulating and distributing incident statistics, and identifying requirements of safety and health laws and regulations.

2.4 Other:

Any persons who observe a health and safety hazard should immediately report observations/concerns to appropriate key personnel listed in Section 2.1 or 2.2 above. All employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of Health, Safety, or Environmental concerns exist.

2.5 U.S. Army Corps of Engineers POC: Pedro Rosario González

This is the POC representing the USACE who will serve as a liaison between the USACE and the contractor, and USACE and the USEPA.

2.6 ARDL Senior Program Manager (SPM): Rob Dismang

The ARDL SPM, as the representative for ARDL is responsible for the direction of ARDL activities, including work zone and perimeter air monitoring and sampling, documentation, and oversight of removal activities. The SPM interfaces directly with the U.S. Army Corps representative regarding all ARDL tasks. The ARDL SPM will also provide Health and Safety guidance to the RM and HSO. The SPM is responsible for overseeing all aspects of the project, ARDL project personnel, and all subcontractors.

2.7 ARDL Site Leader (PM/S): Michell Jenkins

The PM/S will oversee and has the overall responsibility for all on-site activities. The PM/S will oversee the documenting and tracking of all work performed in the field. The PM/S will also be responsible for overseeing all air monitoring in the work zones, including calibration of instruments as appropriate. The ARDL PM/S will also provide Health and Safety support to the RM and HSO. The PM/S is responsible for managing all aspects of the project, ARDL project personnel, and subcontractors.

2.8 ARDL Site Safety and Health Officer (SSHO): Chris Creps

The SSHO approves the Health and Safety Plan and provides guidance to field personnel on health and safety issues. The ARDL SSHO will also provide Health and Safety support to the RM and HSO.

3.0 Site Background and Scope of Work

3.1 Site Background

The Facility Area was historically used as a primary zinc smelter between 1916 and 1953 and produced slab zinc, zinc carbonate, cadmium, lead, and sulfuric acid. The primary residue generated during the smelter's operation was slag which was poured along the northern and western boundary of the Facility Area in a molten state and allowed to cool over time. According to historical aerial photographs, the slag piles were located along the western and northern boundaries of the Facility Area and originally encompassed more than 15 acres. The vitrified slag was allegedly transported to areas outside the Facility Area by employees from the village, local business personnel, and area residents, for use as fill and surfacing material. The zinc furnace operations ceased in 1953, with subsequent operations limited to roasting ores for other smelter facilities and the production of sulfuric acid. These roasting operations continued until 1967 when American Zinc discontinued all operations.

Based on aerial photographs, all buildings and other facilities associated with former smelting operations were razed between 1967 and 1978. XTRA Intermodal, Inc. ('XTRA') leased the Facility Area property from American


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Zinc (now Blue Tee Corporation or 'Blue Tee') between 1976 and 1979 and purchased the property in 1979, including the clinker and other smelter residues, minerals or metals located on the property.

From 1976 to sometime after 2003, XTRA operated a transport trucking terminal on the Facility Area which included the lease, storage, and maintenance of a diverse fleet of over-the-road trailers, intermodal ("piggy-back") trailers, and intermodal equipment. Beginning in 1976, XTRA ground and redistributed the stockpiled slag across the Facility Area to build up and level the Facility Area for its trucking operations.

3.2 Scope of Work

The remedial design for this site includes the excavation and removal of contaminated soils, and the restoration of the property. Anticipated site activities consist of the following:

1. Mobilization
2. Site Preparation of residential properties
3. Removal (excavating contaminated soils) of residential properties
4. Backfill & Restoration of residential properties
5. Transportation of excavated soils to the Repository
6. Demobilization

4.0 **Hazard Assessment**

This section is to be addressed in the daily toolbox safety meeting as each task is to be initiated. Each Activity Hazard Analysis (AHA) is designed to develop awareness to chemical and physical hazards specific to each task. It would be impractical to repeat in complete detail each control measure and SOP for each job task. Sources, Hazards and Control Measures will be addressed for each job task.

Specific work tasks with unique hazards and/or PPE requirements must be evaluated or reevaluated prior to beginning work. This task review will be led by the Response Manager and the HSO, and will include knowledgeable individuals such as the worker(s) and the supervisor. PPE requirements, based on this assessment, will be included in Section 6 of the HASP or in the AHA for the specific task. All workers must be trained in the requirements of the HASP and the applicable AHAs prior to beginning work. The required PPE may be changed by the HSO, based on the results of additional air monitoring, or on task-specific needs. Downgrades will require the approval of the Project Health and Safety Manager unless otherwise permissible by the HASP.

The following section outlines the Referenced Standard Operations Procedures (SOPs), Chemical Hazards and AHAs associated with this project. Applicable SOPs are available from ER's Health and Safety Database.

The HSO will revise AHAs for site-specific activities and review with the work crew before commencing any activity.

The following table lists ER health and safety SOPs that are applicable to this project.

Referenced SOPs:	
ER SOPs applicable to this project:	
HS-01 Air Monitoring and Sampling HS-02 BBP Exposure Control Plan HS-08 Decontamination Measures HS-10 Motor Vehicle Operation HS-12 Electrical – General HS-13 Excavation and Trenching Operations HS-15 Hazard Communication Program HS-16 Hearing Conservation HS-17 Heat Stress HS-18 Heavy Equipment Operation HS-24 Personal Protective Equipment HS-26 Respiratory Protection HS-30 Traffic Control Safety	HS-36 Proper Lifting Techniques HS-38 Fire Prevention Protection HS-41 Ladder Safety HS-48 Lead Hazard Safety Program HS-49 Tool Safety and Inspection HS-50 First Aid HS-51 Incident Reporting and Analysis HS-52 General Waste Management HS-53 Spill Prevention Response HS-55 Short Service Employee Program HS-56 Stop Work Authority Program HS-64 Security Best Practices HS-73 Assured Equipment Grounding Program


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Referenced SOPs:			
ER SOPs applicable to this project:			
Lifts Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Items to be lifted: N/A		Critical <input type="checkbox"/>	Ordinary <input type="checkbox"/>
Excavations Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

4.1 Chemical Hazards Please refer to Table 3.1 of the ARDL SSHP, Appendix L for Potential Chemical Hazards.

<u>Hazards</u>	<u>Lead</u>
OSHA PEL (mg/m ³)	0.05
IDLH (mg/m ³)	100.0
Action Level (mg/m ³)	0.03
Biological Exposure Indices (ACGIH-2014)	30µg/ 100 ml Blood; Also, ZPP per OSHA Not Time Critical
Routes of Entry	Inhalation Ingestion Skin/Eye Contact
Target Organs	Central nervous system, GI tract, blood, kidneys
Acute and Local Effects	Upper respiratory irritation, cough, dry throat, wheezing
Chronic and Systemic Effects	Liver failure, nervous system damage, blood anemia, potential cancer

4.2 Task Specific Hazards and Controls

This section is to be addressed in the daily toolbox safety meeting as each task is to be attempted. Each Activity Hazard Analysis is designed to develop awareness to chemical and physical hazards specific to each task. It would be impractical to repeat in complete detail each control measure and SOP for each job task. Sources, Hazards and Control Measures will be addressed for each job task.


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Activity Hazard Analysis		
Activity: Site Preparation		
Personal Protective Equipment: Level D		
Hazard	Sources	Control Measures
Load Shift	Improper Secured Equipment during equipment transportation	Proper use of binding equipment Proper location of load on vehicle Obey weight restrictions and specialized loading guidelines of transport Vehicle
Heavy Equipment rollover	Improper Loading/Unloading of Equipment	Ensure proper loading and unloading techniques are utilized Ensure equipment trailer is adequate to carry equipment load Ensure loading ramps meet specific equipment loading needs Follow HS-18 Heavy Equipment Operation
Crush/laceration	Binding equipment	Only approved ratchet binding equipment will be utilized Pipes or leverage extension devices will not be permitted with binders Proper weight ratings required for chains, straps, cables Proper PPE required including cut resistant workgloves
Heat Stress	Outside ambient Temperatures	Shaded and/or cool break areas Review and adhere to ER SOP HS-17 Plenty of fluids & breaks
Collision	Improper motor vehicle operation	Follow HS-10 Motor Vehicle Operation Only qualified drivers permitted to operate vehicles Obey all traffic laws Wear seat belts while in operation
Noise	Equipment/vehicles	Hearing protection for levels > 85 dBs Hearing protection required when operating open-cab equipment Hearing protection required when working near equipment
Slips/Trips/Falls	Vehicle entry/exit	Identify slippery surfaces. Three points of contact. Use ramps or steps for mounting/dismounting elevated surfaces
Struck by/caught between	Vehicle & Equipment Operation/Traffic	Follow HS-10 Motor Vehicle Operation Follow HS-18 Heavy Equipment Operation Only qualified drivers permitted to operate vehicles Wear ANSI Class 2 high-visibility safety vest Wear seat belts while in operation Back up alarms functional and loud enough to hear over surroundings


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Activity Hazard Analysis		
Activity: Excavation of Contaminated Soils		
Personal Protective Equipment: Level D w/air monitoring justification		
Hazard	Sources	Control Measures
Lead	Soil	Maintain dust suppression with water spray/mist at all times Control work area to authorized personnel only Utilize PPE per Section 6 of this HASP Minimize contact with contaminated soils
Cuts/Punctures	Sharp Objects	Beware of sharp objects Wear cut resistant gloves
Bites/Stings	Wildlife (Spiders, Wasps, Bees, Dogs)	Avoid contact Avoid reaching under rocks, wood, debris, etc. with hands Shake boots prior to donning Employees with a history of severe allergic reactions shall possess epinephrine prescribed by their doctor
Ergonomics	Lifting and Bending	Follow HS-36 Proper Lifting Techniques Use Buddy system Use mechanical means when feasible
Heat Stress	Outside ambient Temperatures	Shaded and/or cool break areas Review and adhere to ER SOP HS-17 Plenty of fluids & breaks
Noise	Equipment/vehicles Hand tools	Hearing protection for levels > 85 dBs Hearing protection required when operating open-cab equipment Hearing protection required when working near equipment
Slips/Trips/Falls	Uneven Terrain Debris Excavations	Identify/mark hazards Remove debris from walking / working surfaces Cover/fill in holes Mow tall grass if feasible Mark excavations
Electrocution/explosion/fire	Overhead/underground utilities	Locate and mark existing energized lines – Local locate company 811 Disconnect/de-energize electrical lines if feasible Maintain a minimum distance of 10' from overhead power lines General Field Safety Rules in this HASP further define the minimum distances for voltages in excess of 50Kv. Use spotter at all time during operations near overhead lines Boot lines or use hot stick to move line out of reach of equipment Hand dig/probe to locate and uncover underground utilities
Struck by/caught between	Vehicle & Equipment Operation/Traffic	Follow HS-10 Motor Vehicle Operation Follow HS-18 Heavy Equipment Operation Only qualified drivers permitted to operate vehicles Wear ANSI Class 2 high-visibility safety vest Wear seat belts while in operation Back up alarms functional and loud enough to hear over surroundings


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Activity Hazard Analysis		
Activity: Backfilling/Restoration of Properties		
Personal Protective Equipment: Level D		
Hazard	Sources	Control Measures
Cuts/Punctures	Sharp Objects	Beware of sharp objects Wear cut resistant gloves
Ergonomics	Lifting and Bending	Follow HS-36 Proper Lifting Techniques Use Buddy system Use mechanical means when feasible
Bites/Stings	Wildlife (Spiders, Wasps, Bees, Dogs)	Avoid contact Avoid reaching under rocks, wood, debris, etc. with hands Shake boots prior to donning Employees with a history of severe allergic reactions shall possess epinephrine prescribed by their doctor
Heat Stress	Outside ambient Temperatures	Shaded and/or cool break areas Review and adhere to ER SOP HS-17 Plenty of fluids & breaks
Noise	Equipment/vehicles Hand tools	Hearing protection for levels > 85 dBs Hearing protection required when operating open-cab equipment Hearing protection required when working near equipment
Slips/Trips/Falls	Uneven Terrain Debris	Identify/mark hazards Remove debris from walking / working surfaces Cover/fill in holes Mow tall grass if feasible Mark excavations
Electrocution	Overhead utilities	Disconnect/de-energize electrical lines if feasible Maintain a minimum distance of 10' from overhead power lines General Field Safety Rules in this HASP further define the minimum distances for voltages in excess of 50Kv. Use spotter at all time during operations near overhead lines Boot lines or use hot stick to move line out of reach of equipment
Struck by/caught between	Vehicle & Equipment Operation/Traffic	Follow HS-10 Motor Vehicle Operation Follow HS-18 Heavy Equipment Operation Only qualified drivers permitted to operate vehicles Wear ANSI Class 2 high-visibility safety vest Wear seat belts while in operation Back up alarms functional and loud enough to hear over surroundings



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4.3 General Hazards and Controls

Physical/Environmental Hazard Analysis		
Hazard	Pre-Planning to Control Hazard	Active Control Measures
Electrical	<ol style="list-style-type: none"> 1. Locate and mark existing energized lines. 2. De-energize lines if necessary, to perform work safely. 3. All electrical circuits will be grounded. 4. All 120-volt single phase which are not a part of the permanent wiring will have a ground-fault interrupter in place. 5. Temporary wiring will be guarded, buried or isolated by elevation to prevent accidental contact by personnel or equipment. 6. Evaluate potential for high moisture/standing water areas and define special electrical wiring needs-typically requirement for low voltage lighting systems. 	<ol style="list-style-type: none"> 1. Utilize Qualified Electrical Contractor for any new or temporary electrical construction. 2. Ensure electrical equipment/material meet all local, state and federal code and specifications 3. Use GFCI for all power tool usage. 4. ER trained employee shall perform utility sweep of proposed excavation
Ergonomic	<ol style="list-style-type: none"> 1. All operations evaluated for ergonomic impact. 2. Procedures written to define limits of lifting, pulling, etc. 3. Procedures to define how personnel will utilize proper ergonomic concepts and utilize mechanical material handling equipment. 4. Necessary mechanical material handling equipment specified and ordered for project. 	<ol style="list-style-type: none"> 1. Proper body mechanics techniques stressed and enforced on a daily basis. 2. Mechanical handling equipment maintained and utilized. 3. Proper body mechanics stressed in scheduled safety meetings. 4. Injuries reported and medically treated if in doubt about severity. 5. Operations changed as necessary based on injury experience or potential.
Existing Site Topography	<ol style="list-style-type: none"> 1. Survey site prior to layout. Identify areas unsafe for personnel or equipment due to physical conditions. 2. Identify/locate existing utilities. 3. Determine impact of site operations on surrounding properties, communities, etc. 4. Identify mechanized equipment routes both on site and onto and off the site. 5. Layout site into exclusion and contamination reduction zones based on initial site evaluation. 	<ol style="list-style-type: none"> 1. Awareness to work environment – regular inspection/audits to identify changing conditions. 2. Shut down operations when unknown conditions encountered.
Fires & Explosions	<ol style="list-style-type: none"> 1. Evaluate all operations for fire and explosion potential. 2. Define specific procedures for unique operations presenting unusual hazard such as flammable tank demolition. 3. Ensure that properly trained personnel and specialized equipment is available. 4. Define requirements for handling and storage of flammable liquids on site, need for hot work permits and procedures to follow in the event of fire or explosion. 5. Define the type and quantity of fire suppression equipment needed on site. 6. Coordinate with local firefighting agencies to discuss unique fire hazards, hazardous materials, etc. 7. Ensure site operations comply with 29CFR 1910.157G. 8. Provide Fire Extinguisher Training and Education 	<ol style="list-style-type: none"> 1. Inspect fire suppression equipment on a regular basis. 2. Store flammables away from oxidizers and corrosives. 3. Utilize Hot Work Permit for all hot work on-site. 4. Follow any site-specific procedures regarding work around flammables. 5. Review and practice contingency plans. 5. Discuss on regular basis at scheduled safety meetings. 6. ER trained employee shall perform utility sweep of proposed excavation
Flammable Vapor and Gases	<ol style="list-style-type: none"> 1. Evaluate site to determine sources of likely flammable gas or vapor generation. 2. Develop specific procedures to be followed in the event of exposure to flammables. 3. Specify specialized equipment needs for inerting flammable atmospheres, ventilating spaces and monitoring flammable vapor concentrations. 4. Define requirements for intrinsically safe equipment. 5. Develop contingency plan to follow in the event of fire or explosion. 	<ol style="list-style-type: none"> 1. Calibrated monitoring equipment available and utilized by trained personnel whenever working where flammable gas or vapor is present. 2. Monitoring performed at regular frequency and in all areas where vapor could generate or pool. 3. Equipment and operations shut down when threshold levels are exceeded. 4. Contingency plans reviewed regularly by all involved personnel. 5. Work areas are carefully inspected to look for possible ignition sources. Sources are removed. 6. Operations shut down if specific task procedures can't be followed to the letter.
Heavy Equipment Operation	<ol style="list-style-type: none"> 1. Define equipment routes and traffic patterns for site. 2. Ensure that operators are properly trained on equipment operation for all equipment required on project. 3. Define safety equipment requirements, including back up alarm and roll over, for all equipment on site. 4. Define equipment routes and traffic patterns for site. 	<ol style="list-style-type: none"> 1. Equipment inspected as required. 2. Equipment repaired or taken out of service. 3. Ground spotters are assigned to work with equipment operators. 4. Utilize standard hand signals and communication protocols.


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Physical/Environmental Hazard Analysis		
Hazard	Pre-Planning to Control Hazard	Active Control Measures
	5. Implement SOP of requiring operators to safety inspect equipment on a daily basis in accordance with manufacturer requirements. 6. Evaluate project requirements to ensure that equipment of adequate capacity is specified.	5. Personnel wear the proper PPE; utilize hearing protection, gloves for handling rigging, etc. 6. Equipment safety procedures discussed at daily scheduled safety meetings. 7. Personnel do not exceed lifting capacities, load limits, etc. for equipment in question. 8. Personnel follow basic SOP's which prohibit passengers on equipment, activating brakes and grounding buckets, securing loads prior to movement, etc.
Illumination	1. Evaluate all operations and work areas to determine lighting requirements. 2. Specify specialized lighting requirements including explosion proof, intrinsically safe, lighting needs. 3. Determine if nighttime outdoor operations are necessary. 4. Evaluate tasks to be performed and number of light plants necessary to allow operations. 5. Ascertain if outdoor lighting from nighttime operations will have an impact on surrounding communities.	1. Inspect specialized equipment and discard or replace as needed. 2. Add additional lighting to areas with lighting deficiencies. 3. Inspect drop cords and portable lights on regular basis. Replace or repair as necessary.
Noise	1. Local community noise standards examined. 2. Expected loud operations evaluated to determine compliance with community standards. 3. Loud operations scheduled for approved time periods. 4. Noise level standards established for equipment brought onto site. 5. Hearing protection requirements defined for personnel expected to have excessive exposures.	1. Personnel receive annual audiogram. 2. Personnel required to wear hearing protection. 3. Routine noise level monitoring and dosimetry performed. 4. Defective equipment repaired as needed. 5. Ongoing hearing conservation education promoted at scheduled safety meetings. 6. Medical evaluation following noise (impact) exposure if symptoms present themselves.
Personal Injuries	1. Site operations will be evaluated for exposures with serious injury potential such as falling objects, pinch points, flying objects, falls from elevated surfaces, etc. 2. A written Fall Prevention Program will be developed if workers will be required to work at heights greater than 6 feet from unguarded work locations. 3. PPE requirements will be based on potential for injury.	1. Personnel will wear required PPE. 2. Specialized equipment such as rope grabs, winches, etc. will be inspected prior to each use. 3. Defective equipment will be immediately replaced. 4. All injury and near miss incidents will be reported to the HSO. 5. First aid/CPR trained person on site at all times. 6. First aid on site. 7. Transport for medical care if necessary.
Small Equipment Usage	1. Site operations will be evaluated to determine need for specialized intrinsically safe, explosion-proof and UL approved equipment and instruments. 2. Implement requirement for G.F.I., double insulated tool usage, or assured grounding program in all outdoor operations, will be utilized. 3. Specify equipment needs to ensure that equipment used only for the purpose for which it is designed and to prevent abuse or misuse of the equipment. 4. Specify requirements for the inspections and maintenance of specialized equipment. 5. Specify that all equipment utilized on the project meets all OSHA requirements.	1. Inspect each tool prior to each use. 2. Ensure all guards are in use and properly positioned. 3. Ensure item being worked on is properly braced if necessary. 4. Get help when appropriate to hold or brace item being worked on. 5. Wear cut resistant or other appropriate gloves in addition to level C PPE.
Weather Conditions	1. Evaluate prevailing weather conditions for the site. 2. Contingency plans developed for likely severe weather conditions such as tornado, and extreme thunderstorm. 3. Provide for daily weather forecast service in extreme weather areas. 4. Plan to weatherize safety systems, such as showers and eye washes that would be impacted by extreme cold weather. 5. Order necessary specialized cold weather clothing. 6. Grounding and bonding requirements defined for thunderstorm areas. 7. Sheltered air-conditioned break areas provided for extreme hot and cold weather zones.	1. Employees trained in contingency plan for severe weather conditions. 2. Emergency water sources inspected regularly in cold areas. 3. Weather service contacted regularly during storm conditions. 4. Supervisory personnel cease operations during extreme storm conditions (i.e., thunderstorms). 5. Personnel evacuate to safe assembly area.
Heat Stress	1. Anticipate possible high temperatures (summer months). 2. Be aware of heat stress symptoms, quit sweating, pale, clammy skin, dizziness	1. Cool break area. 2. Drink water. 3. Buddy system/ awareness 4. First aid on site. 5. Medical care if symptoms persist.


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Physical/Environmental Hazard Analysis		
Hazard	Pre-Planning to Control Hazard	Active Control Measures
Cold Stress	1. Anticipate possible low temperatures (winter months). 2. Remember the temperature does not have to be below freezing to have a cold stress situation.	1. Warm break area. 2. Warm decaffeinated drinks. 3. Buddy system/ awareness. 4. First aid on site. 5. Medical care if symptoms persist

5.0 Training Requirements

This section describes ER's project training requirements and site visitor policy. Training of all personnel shall be in accordance with OSHA 29 CFR 1910.120 and the National Fire Protection Association (NFPA) standards.

5.1 Project Training Requirements

The training listed in Table 5-1 will be provided to project participants as noted. All required training will be documented, and this documentation maintained onsite.

Project Training Requirements:		
Topic	Description	Personnel
General Training		
Site Safety and Health Plan	Site-specific hazards and control requirements, before commencement of field work. Includes training in proper use and care of PPE.	All project personnel
Activity Hazard Analysis	Activity-specific hazards, controls and training requirements for a specific phase or activity, prior to commencement of activity	Workers, supervisors and oversight personnel engaged in the activity
Daily Safety Briefing	In addition to plan-of-the-day and daily hazard reminders, often used to cover a specific topic; provided refresher training on various issues; or changes in hazards, controls or procedures.	All field workers, supervisors and field oversight personnel
Emergency Action Plan	Roles, responsibilities, recognition of emergency conditions, reporting and notification, evacuation and other procedures.	All project personnel, with detailed information on procedures for workers with special responsibilities
OSHA 40-Hour Hazardous Waste Operation (HAZWOPER) Training	General hazards and controls for hazardous waste activities at remediation sites, prior to performing work in an exclusion zone.	General site workers, supervisors, oversight personnel on HAZWOPER sites
OSHA 8-Hour Supervisor	Managing HAZWOPER work activities	Supervisors and management support staff on HAZWOPER sites
OSHA 8-Hour Refresher	Current annual refresher for HAZWOPER sites.	Workers, supervisors and oversight personnel engaged in the activity
Hazard Communication	Requirements for SDS, labels; hazards of site materials and controls; location of and access to inventories and SDS.	All project personnel potentially exposed to hazardous materials
Fire Extinguisher	General education on selection, distribution, and proper use of fire extinguishers.	All project personnel
Special Training		
Federal OSHA Lead Construction Standard (29 CFR 1926.62)	General hazards and controls for lead contamination activities at remediation sites, prior to performing work in an exclusion zone.	General site workers, supervisors, oversight personnel on HAZWOPER sites
First aid/ Cardiopulmonary Resuscitation (CPR)	Red Cross, National Safety Council or other authorized course, with current refresher	At least ER 2 project personnel
Lockout/Tagout/Tryout (LOTOTO)	Site-specific energy control and verification procedures.	Authorized personnel working on de-energized systems, and affected employees whose work may be impacted by a lockout/tag/tryout situation.


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Project Training Requirements:		
Topic	Description	Personnel
Other Heavy Equipment operations	Qualified by Construction Manager, Superintendent or Equipment Supervisor as documented on ER Equipment Operator Qualifications Form	Equipment Operators
Power tools (e.g. chain saws, chippers, powder-actuated tools, compressed air systems)	Hazards and proper use and maintenance as described in operations manual. Powder-operated tool users certified by manufacturer.	Tool users

5.2 Visitor Indoctrination Policy

All site visitors will be required to review the daily tailgate safety issues and sign the visitor log. At a minimum, all visitors must be informed of the anticipated hazards and PPE requirements, designated work zones, escort procedures, and emergency procedures.

6.0 **Personal Protective Equipment**

The following is a brief description of the personal protective equipment, which may be required during various phases of the project. The USEPA terminology for protective equipment will be used; Levels A, B, C and D.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Requirements. Each employer shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment. The written Respirator Program will be maintained at the local and regional offices.

6.1 Level A Protection Shall Be Used When: (NOT ANTICIPATED)

- The extremely hazardous substance requires the highest level of protection for skin, eyes and the respiratory system;
- Substances with a high degree of hazard to the skin are known or suspected;
- Chemical concentrations are known to be above IDLH levels; or,
- Biological hazards requiring Level A are known or suspected.

6.2 Level B Protection Shall Be Used When: (NOT ANTICIPATED)

- The substance(s) has been identified and requires a high level of respiratory protection but less skin protection;
- Concentrations of chemicals in the air are IDLH or above the maximum use limit of an APR with full-face mask;
- Oxygen deficient or potentially oxygen deficient atmospheres (<19.5%) are possible; and/or, Confined space entry may require Level B.
- Incomplete identification of gases and vapors, but not suspected to be harmful to skin or skin absorbable

6.3 Level C Protection Shall Be Used When:

- The same level of skin protection as Level B, but a lower level of respiratory protection is required;
- The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove contaminants; or,
- The substance has adequate warning properties and all criteria for the use of APR respirators has been met

6.4 Mod Level D Protection Shall Be Used When:

- The atmosphere is demonstrated to be within OSHA permissible limits
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.



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Mod Level D Protection Equipment at a Minimum Shall Consist of:

Chemical/Particulate Protective Coveralls	Poly-coated Tyvek or Particulate Barrier or equivalent for both
Safety Shoes/Boots	Steel toed/shank work boots
Boot Covers (booties)	Latex
Work Gloves	Cut resistant gloves
Hard Hat	ANSI approved
High Visibility Garment	ANSI Class 2 high-visibility
Face Shield	As necessary
Safety Glasses	ANSI approved
Modifications:	

6.5 Level D Protection Shall Be Used When:

- The atmosphere is demonstrated to be below OSHA permissible exposure limits
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

Level D Protection Equipment at a Minimum Shall Consist of:

Standard Work Clothing	Long pants/sleeved shirt
Rain Suit	As required
Safety Shoes/Boots	Steel toed/shank
Boot Covers (booties)	During muddy conditions as necessary
Work Gloves	Cut resistant gloves
Hard Hat	ANSI approved
Safety Glasses	ANSI approved
High Visibility Garment	ANSI Class 2 high-visibility
Modifications:	

6.6 Decisions to Upgrade/Downgrade PPE

All decisions to downgrade from Level B to C or D must be accompanied by air monitoring results. The Project Health and Safety Manager must be consulted prior to on-site decisions to downgrade. All decisions must be documented with an Addendum to the HASP.

The following conditions will necessitate reevaluation of PPE use.

- commencement of a new work not previously identified
- change of job tasks during a work phase
- change of season/weather
- contaminants other than those identified in Safety Plan
- change in ambient levels of contaminants
- change in work which affects degree of chemical contact


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6.7 Project Personal Equipment Requirements

Project Personal Protective Equipment Requirements:							
Activity	Respiratory Protection	Body Protection	Head Protection	Hand Protection	Eye/Face Protection	Foot Protection	Hearing Protection
Site Mobilization / Preparation (Level D)	None	ANSI- Class 2 Hi Vis vest	ANSI- approved hardhats	Cut resistant work gloves (CR 4)	ANSI- approved safety glasses	ANSI- approved safety boots	Hearing protection for levels > 85 dBs
Excavation (Level D) with air monitoring justification	None	ANSI Class 2 Hi Vis Vest	ANSI- approved hardhats	Cut resistant work gloves (CR 4)	ANSI- approved safety glasses	ANSI- approved safety boots	Hearing protection for levels > 85 dBs
Restoration (Level D)	None	ANSI Class 2 Hi Vis Vest	ANSI- approved hardhats	Cut resistant work gloves (CR 4)	ANSI- approved safety glasses	ANSI- approved safety boots	Hearing protection for levels > 85 dBs

Personal Protective Equipment Inspection and Care are covered in the ER SOP HS-24.

6.8 Respiratory Protection Program

ER shall implement ER SOP HS-26 Respiratory Protection Program for its employees and subcontractors and train them on its contents. The program will be administered by the HSO.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Requirements. ER and subcontractors shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment.

7.0 Medical Monitoring Requirements
7.1 Pre-Employment Medical Examination

- Pre-employment medical examinations are required for persons working at hazardous waste sites.
- All examinations must be completed and documented prior to assignment to this site.
- All examinations will be conducted following parameters established by WorkCare™.

7.2 Site Specific Medical Examination

- Blood lead/ZPP testing shall be performed per HS-48 Lead Hazard Safety Program

7.3 Annual Medical Examination

- The medical examination must have been within a 12-month period prior to on-site activity and repeated annually.

7.4 Suspected Exposure Medical Examination

- Following any suspected uncontrolled exposure to site contaminants, personnel should be scheduled for a special medical examination.
- The medical examination will be specific for the contaminants and the associated target organs or physiological system.
- Questions regarding the type of medical examination can be directed to ER's Vice President, Health and Safety.

7.5 Contractor Physical Examination Requirements


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- a. All subcontractors entering the contamination reduction or exclusion zone will have adequate medical surveillance satisfying 29 CFR 1910.120.10 (f).

8.0 Health and Hazard Monitoring

According to 29 CFR 1910.120 (h) Air Monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection needed on-site. ER shall be tasked for all air monitoring on this project and will maintain an air monitoring program to evaluate concentrations of specific chemical groups or contaminants in ambient air during work activities. This program will include both real-time, direct monitoring equipment, and chemical-specific personal air monitoring as appropriate.

Both area and personal monitoring will be conducted to document potential exposures to hazardous constituents, as well as to evaluate the adequacy of the Personal Protection Equipment (PPE) program.

8.1 Routine Air Monitoring Requirements

- Upon initial entry to rule out IDLH conditions
- When the possibility of an IDLH condition or flammable atmosphere has developed
- When work begins on a different portion of the site
- Contaminants other than those previously identified are being handled
- A different type of operation is initiated
- Employees are handling leaking drums or containers or working in areas with obvious liquid contamination
- During confined space work

Air monitoring will consist at a minimum of the criteria listed below. All air monitoring data will be documented and available in the command post site files for review by all interested persons. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications. Calibration and maintenance performed will be entered in the site log and/or instrument logbook.

8.2 Site Specific Air Monitoring Requirements

Health Hazard Monitoring:					
Activity	Target Analyte	Instrument	Frequency	Action Levels	Actions/Upgrade and Rationale
Excavation (Level D)	Lead,	Gillian personal sampling pumps or equivalent	Initial days of intrusive work 6 samples per HEG and periodic per HS-48 and 1926.62 thereafter*	Lead - .03 mg/m ³	Cease operations reassess engineering controls and Level of PPE
Particulates	Fugitive dust	DustTrak or similar	During Removal	2.5 mg/m ³ (one-half of the PEL for Particulates Not Otherwise Specified)	Implement dust control measures (i.e. water spray) or Level C with P100 cartridges
Site wide	Temperature Extremes Heat Stress	Thermometer	Per HS-17 Heat Stress	Per HS-17 Heat Stress	Per HS-17 Heat Stress

8.3 Integrated Personnel Exposure Monitoring

ER will perform personal exposure air monitoring. Monitoring shall be performed per ER HS-01 Air Monitoring and HS-48 Lead Hazard Safety Program. Sampling for Lead shall be conducted by ER utilizing equipment and media appropriate to NIOSH method 7300. Analysis will be done by AIHA accredited laboratory. Copies of all sampling data, including instrument calibration and maintenance, personal data sheets, COCs, and analytical results shall be maintained by ER.



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9.0 Contamination Control and General Field Safety Rules

9.1 Work Zones

The primary purpose for site controls is to establish the hazardous area perimeter, to reduce migration of contaminants into clean areas and to prevent access or exposure to hazardous materials by unauthorized persons. At the end of each workday, the site should be secured or guarded, to prevent unauthorized entry. Site work zones will include:

Clean Zone/Support Zone (SZ)

This uncontaminated support zone or clean zone will be the area outside the exclusion and decontamination zones and within the geographic perimeters of the site. This area is used for staging of materials, parking of vehicles, office and laboratory facilities, sanitation facilities, and receipt of deliveries. Personnel entering this zone may include delivery personnel, visitors, security guards, etc., who will not necessarily be permitted in the exclusion zone. All personnel arriving in the support zone will upon arrival, report to the command post and sign the site entry/exit log. There will be one controlled entry/exit point from the clean zone to the decontamination zone.

Contamination Reduction Zone (CRZ)

The CRZ will provide a location for removal of contaminated personal protective equipment and final decontamination of personnel and equipment. All personnel and equipment should exit via the decon area. A separate decontamination area will be established for heavy equipment.

1. The CRZ is a buffer zone between contaminated and clean areas.
2. Identified by yellow banner guard or other noticeable material.
3. Decon line is located at the boundary of the CRZ entering the decontamination area.

Exclusion Zone/Hot Zone (EZ)

The exclusion zone will be the "hot-zone" or contaminated area inside the site perimeter. Entry to and exit from this zone will be made through a designated point and all personnel will be required to sign the hot zone entry/exit log located at the decon area. Appropriate warning signs to identify the exclusion zone should be posted (i.e. "DANGER – AUTHORIZED PERSONNEL ONLY", "PROTECTIVE EQUIPMENT REQUIRED BEYOND THIS POINT", etc.) Exit from the exclusion zone must be accompanied by personnel and equipment decontamination as described in Section 10.0 of this plan.

1. These areas will be defined by banner guard or similar material to identify boundaries
2. General Safety Rules for Exclusion Zone
 - a. wear the appropriate level of PPE defined in plan
 - b. do not remove any PPE or break the integrity to touch parts of your body
 - c. no smoking, eating or drinking
 - d. no horseplay
 - e. no matches or lighters in this zone
 - f. implement the communication and line of sight system

9.2 General Field Safety Rules

- Horseplay is not permitted at any time.
- All personnel coming on site will sign in and out on a daily basis.
- All visitors must be sent to the command post.
- Visitor log will be maintained at the command post or with the security guard.
- Visitors are not allowed in the work areas without authorization.
- Security will be maintained at the site by closing all gates during normal work hours. Site will be locked up in the evening.
- If unauthorized members of the public are found on site, contact RPM immediately and do not leave the individual unattended.


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- It is ER policy to practice administrative hazard control for all site areas by restricting entrance to exclusion zones to essential personnel and by using operational SOPs.
- Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground. Stay away from any waste drums unless necessary. Protect equipment from contamination by bagging.
- Eating, drinking, or smoking is permitted only in designated areas in the support zone.
- Cell phone use is not allowed in EZ, unless authorized by Project HS Manager.
- Cell phone use while operating equipment is not allowed.
- Cell phone use while operating motor vehicles must comply with applicable DOT regulations
- Hands and face must be thoroughly washed upon leaving the decon area.
- Beards or other facial hair that interferes with respirator fit will preclude wearing a respirator.
- All equipment must be decontaminated or discarded upon exit from the exclusion zone.
- All personnel exiting the exclusion zone must go through the decontamination procedures described in Section 10.0.
- Safety Equipment described in Section 6.0 will be required for all field personnel.
- Personnel will only travel in vehicles where individual seats for each occupant are provided.
- Seat belts will be worn as required.
- Fire extinguishers will be available on site and in all areas with increased fire danger such as the refueling area.
- A minimum of two personnel with FA/CPR designations will always be on site whenever heavy equipment is operated.
- Only necessary personnel need to be on or around heavy equipment.
- Employees will not interfere with or tamper in any way with air monitoring equipment.
- Backhoes or other equipment with booms shall not be operated within a minimum of 10 feet of any electrical conductor.

Minimum Clearance from Energized Overhead Electric Lines

NOMINAL SYSTEM VOLTAGE	MINIMUM REQUIRED CLEARANCE
0-50 kV	10 feet
51-100 kV	12 feet
101-200 kV	15 feet
201-300 kV	20 feet
301-500 kV	25 feet
501-750 kV	35 feet
751-1000 kV	45 feet

- Buddy System
 - The buddy system is mandatory at any time that personnel are working in the exclusion zone, remote areas, on tanks, or when conditions present a risk to personnel.
 - A buddy system requires at least two trained/experienced people who work as a team and maintain at a minimum audible and/or visual contact while operating in the exclusion zone.
- Communication Procedures
 - Radios will be used for onsite communications and Channel (Repeater) will be the designated channel.
 - The crews should remain in constant radio or visual contact while on site.
 - The site evacuation signal will be 3 blasts on the air or vehicle horn.

10.0 Decontamination Procedures

In general, everything that enters the exclusion zone at this site, must either be decontaminated or properly discarded upon exit from the exclusion zone. All personnel, including any state and local officials must enter and exit the hot zone through the decon area. Prior to demobilization, contaminated equipment will be decontaminated and inspected before



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it is moved into the clean zone. Any material that is generated by decontamination procedures will be stored in a designated area in the exclusion zone until disposal arrangements are made.

NOTE: The type of decontamination solution to be used is dependent on the type of chemical hazards. The decontamination solution for this site is water. Decontamination solution will be changed daily (at a minimum) and collected and stored on-site until disposal arrangements are finalized.

10.1 Procedures for Equipment Decontamination

Following decontamination and prior to exit from the hot zone, the Response Manager shall be responsible for ensuring that the item has been sufficiently decontaminated. This inspection shall be included in the site log.

Equipment decontamination will consist of the following steps: Dry Decon and Boot wash Clean with water/Proper Hygiene

10.2 Procedure for Personnel Decontamination

This decontamination procedure applies to personnel at this site wearing Mod Level D/Level D protection. These are the minimum acceptable requirements:

- | | |
|------------|--|
| Station 1: | Brush boots clean of soil prior to exiting property |
| Station 2: | Remove outer disposable coveralls and work gloves (if applicable) |
| Station 3: | Wash hands and face |
| Station 4: | Personnel will not wear or bring dirty/decontaminated clothing into the break areas. |

Eating, drinking, chewing gum/tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and/or ingestion of materials is prohibited in any areas where the possibility of contamination exists and is permitted only in the designated break area.

Personnel will not wear or bring dirty/decontaminated clothing into the break areas.

10.3 Disposition of Decontamination Wastes

1. All equipment and solvents used for decontamination shall be decontaminated or disposed of with the established waste streams.

11.0 Hazard Communication Program

Each contractor will be responsible for maintaining a copy of their Hazardous Communication Program and SDS' on site. The following items are specific to this job site:

11.1 Safety Data Sheets

1. SDS' will be readily available on site
2. SDS' will be available to all employees for review during the work shift

11.2 Container Labeling

1. All containers received on site will be inspected by the contractor using the material to ensure the following:
 - a. all containers clearly labeled
 - b. appropriate hazard warning
 - c. name and address of the manufacturer

11.3 Employee Training and Information

1. Prior to starting work, each employee will attend a health and safety orientation and will receive information and training on the following:
 - a. an overview of the requirements contained in the Hazardous Communication Standard


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- b. Hazardous chemicals present at the site
- c. the location and availability of the written Hazard Communication Program
- d. physical and health effects of the hazardous chemicals
- e. methods of preventing or eliminating exposure
- f. emergency procedures to follow if exposed
- g. how to read labels and review SDS' to obtain information
- h. location of chemical inventory list and SDS'

12.0 Emergencies/Incidents/Injuries

It is essential that site personnel be prepared in the event of an emergency. Emergencies can take many forms; illnesses or injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather. Due to the nature of the work being performed in residential yards, there is the possibility of contacting buried electrical, sewer, natural gas, or propane lines during the removal of the impacted soils or while initially potholing utilities to confirm their location and depth.

The following sections outline the general procedures for emergencies. Emergency information should be posted as appropriate.

12.1 Emergency Contacts for the Old American Zinc Plant Superfund Site

Emergency Call List and Project Organization		
Service	Name/Organization	Emergency Phone
Fire/Police/Emergency Medical	Fairmont Fire Department & Collinsville Fire Department	Phone #: 618-274-4504 618-346-5022
*AFTER HOURS MEDICAL CARE FACILITY	Gateway Regional Emergency Room 2100 Madison Ave. Granite City, IL 62040	Phone #: 618-798-3000
*PRIMARY MEDICAL CARE FACILITY	Gateway Regional Medical Center 2100 Madison Ave. Granite City, Ill 62040	Phone #: 618-798-3000
Access Care	1 Source	855-517-6872 866-622-7348
ER Response Manager	James Christopher	314-566-1209
ER Site Health and Safety Officer	James Christopher	314-566-1209
ER Project HS Manager	Nick Michailides	314-749-2290

*Directions from site to hospital and clinic are located in Attachment B and will be posted in the project office and available in all ER vehicles.

Site employees will be familiarized with hospital and clinic location and directions shall be verified by James Christopher or his designee as needed.

12.2 Additional Emergency Numbers

Poison Control Center

800-222-1222



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National Response Center
Center for Disease Control
ATF (Bomb Hotline)
Chemtrec

800-424-8802
800-232-4636
888-ATF-BOMB (888-283-2662)
800-262-8200

Environmental Restoration LLC Contacts
ER Corporate Office

888-814-7477 (24 Hr.)

12.3 Emergency Equipment Available On-Site

Communications Equipment	Location
Public Telephones	TBD
Mobile Telephones	Adam Detrich 636-288-9616
Two-Way Radios	Not applicable
Emergency Alarms/Horns	Vehicle Horns / Air Horn
Other:	Not Anticipated

Medical Equipment	Location
First Aid Kits	ER Vehicles / Command Post Office/With Crews
Eye Wash Bottles/Station: (within 100 feet of hazard zone)	ER Vehicles / Command Post Office/With Crews
Safety Shower	Not Anticipated

Fire Fighting Equipment	Location
Fire Extinguishers	ER Vehicles / Command Post Office/CRZ
Other	Flammables storage area

Spill or Leak Equipment	Location
Absorbent Boom/Pads:	Support Zone/Storage trailers
Dry Absorbent:	Support Zone/Storage trailers

12.4 Incident Reporting/Investigations

- All incidents, including personal injury and property damage, must be reported to the PM, Supervisor, or HSO **within 20 minutes of occurrence**.
- The PM will contact the Project Health and Safety Manager and Client Representative by telephone immediately. The PM, HSO, and effected employee(s) will conduct an immediate investigation of the incident and document all results on the Incident and Investigation Report form.
- The Response Manager will assign a supervisory individual to accompany all injured personnel to the clinic and follow guidelines outlined in the ER Return to Work Program.
- Copies of all Incident and Investigation Reports will be sent to the ER Vice President, Health and Safety.

13.0 **Emergency Response Contingency Plan**

13.1 Project Personnel Responsibilities during Emergencies

As the administrator of the project, the PM has primary responsibility for responding to and correcting emergency situations. The PM will:



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- Take appropriate measures to protect personnel including withdrawal from the exclusion zone, total evacuation and securing of the site, up-grading or down-grading the level of protective clothing and respiratory protection.
- Take appropriate measures to protect the public and the environment including isolating and securing the site, preventing run-off to surface waters and ending or controlling the emergency to the extent possible.
- Ensure that appropriate Federal, State and local agencies are informed, and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. In the event of an air release of toxic materials, the local authorities should be informed in order to assess the need for evacuation. In the event of a spill, sanitary districts and drinking water systems may need to be alerted.
- Ensure that appropriate decon treatment or testing for exposed or injured personnel is obtained.
- Determine the cause of the incident and make recommendations to prevent the recurrence.
- Ensure that all required reports have been properly prepared and submitted.

13.2 Medical Emergencies:

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to Vice President of Health and Safety.

Onsite First Aid Support

Onsite medical support during project execution will be available from two or more individuals who are trained in First Aid and Cardiopulmonary Resuscitation (CPR) and blood borne pathogens. First aid kits shall be Type III, 16-unit kits, including one pocket mouthpiece or CPR barrier. Kits shall be checked prior to use, and at least weekly when work is in progress to ensure that contents are replaced as used.

Medical Transport of Employees and Case Management

For non-life threatening injuries, a local clinic will be identified with the assistance of the Corporate Medical Consultant, 1 Source. 1 Source will be contacted prior to transporting any non-life-threatening injured worker to the clinic to develop an appropriate medical treatment plan. If medical evaluation is necessary, the 1 Source nurse/physician will contact the clinic ahead of the arrival of the patient to establish oversight of case management. Under no circumstances will an injured employee drive unescorted to a hospital, clinic, etc. An employee with minor injury may be transported by car after first aid treatment is given. The HSO or other project management personnel will transport the injured person to the facility. The employee who transports the injured person shall be trained in first aid and CPR whenever possible. When the injury is severe, or when in doubt concerning the severity of injury, the employee will be transported by ambulance.

Injured employees that require medical treatment or are taken to a doctor, hospital, clinic, etc., will not be allowed to resume work without a written return to work statement from the treating physician. This statement shall supply a medical diagnosis of the problem, the date of return to work, and work limitations. Should a return to work statement such as "light duty" be given, the treating physician will be contacted to determine the specific limitation. ER will make an assessment of work the employee routinely performs whether or not the limitation interferes with the employee's routine job assignment.

Whenever there are questions on the appropriateness of the diagnosis or prescribed course of treatment, 1 Source will be contacted to arrange for a second opinion. Copies of all Incident and Investigation Reports will be sent to the ER Vice President of Health and Safety.

13.3 Fire or Explosion:

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival the RM or designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on- site.



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If it is safe to do so, site personnel may:

- Use firefighting equipment available on site.
- Remove or isolate flammable or other hazardous materials which may contribute to the fire.

13.4 Spills, Leaks or Releases:

In the event of a spill or a leak, site personnel will:

- Locate the source of the spillage and stop the flow if it can be done safely.
- Begin containment and recovery of the spilled materials.

13.5 Severe Weather Conditions Requiring Emergency Shut Down

The HSO or designated representative will monitor weather reports issued by the local media and the National Weather Service (NWS), and be notified immediately in the event of impending storms. Weather monitoring will be increased when signs of impending storms, including darkening skies, increased wind, heavy rain, or thunder/lightning, are noticed.

The general rule for lightning is "If You See It, Flee It; If You Hear It, Clear It." The flash/bang (f/b) technique may be used to estimate distance to lightning, although using this method requires accurate matching of lightning to thunder, which may not always be possible. The f/b technique is defined as: for each five seconds from the time of observed lightning flash to hearing the associated thunder, the lightning is one mile away. All outside activities will be suspended when a lightning flash is observed in the immediate area, or an f/b of 30 seconds (6 miles) or less is noted. Personnel may continue indoor work activities except for the use of electrical equipment, telephones, and computers. Upon suspension of site activities, all site personnel will gather in a safe location in the support zone for a head count and further instructions. Activities may resume when 30 minutes has passed since the last observable f/b of 30 seconds or less. If a sudden lightning storm catches personnel in an exposed area, they should seek the lowest possible area, away from large objects which may attract lightning or fall over, and assume a crouching position with head lowered. AREAS TO AVOID INCLUDE WATER, TREES, UTILITY POLES, HIGH GROUND, HEAVY EQUIPMENT, AND ALL TALL, ISOLATED OBJECTS. A person struck by lightning needs immediate, professional medical assistance (contact 911). The body will not carry an electrical charge, so personnel trained in first aid/CPR should assist with treatment for shock and/or burns until professional medical assistance is available.

13.6 Evacuation Routes and Resources:

Evacuation routes will be established by work area locations for this site. All buildings and outside work areas shall be provided with two designated exit points. Evacuation shall be conducted immediately, without regard for equipment under conditions of extreme emergency. See site map for evacuation routes.

1. Evacuation notification will be three blasts on an air horn, vehicle horn, or by verbal communication via radio.
2. Keep upwind of smoke, vapors or spill location.
3. Exit through the decontamination corridor if possible.
4. If evacuation is not via the decontamination corridor, site personnel should remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone or in a safe place.
5. The PM will conduct a head count to ensure all personnel have been evacuated safely.
6. In the event that emergency site evacuation is necessary, all personnel are to:
 - Escape the emergency situation;
 - Decontaminate to the maximum extent practical; and,
 - Meet at the command post.
7. In the event that the command post is no longer in a safe zone, meet at the designated upwind location established in the daily safety meeting.

14.0 Internal Safety Inspections and Audits



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Formal safety inspections and audits are required to identify potential health and safety hazards. It is intended to assure documentation of such inspections and audits and to stimulate management, supervisor and employee participation in identifying and correcting hazards and non-compliance situations.

Inspections and audits shall be carried out per ER Corporate Health and Safety Program,



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Attachment A

Site Health and Safety Plan Amendments



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**Site Health and Safety Plan
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Site Safety Plan Amendment	
Amendment No.:	
Site Name:	
Date of Issue:	
Type of Amendment:	
Reason for Amendment:	.
Alternate Safeguard Procedures:	
Required Changes in PPE:	.

ARDL Supervisor

(Date)

ER Site Health and Safety Officer

(Date)

ER Response Manager

(Date)

ER Project Health and Safety Manager

(Date)



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Attachment B

Site Maps



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PRIMARY MEDICAL CARE FACILITY

5/30/2018

2575 Kingshighway, East St Louis, IL 62201 to 2044 Madison Avenue, Granite City, IL - Google Maps



2575 Kingshighway, East St Louis, IL 62201 to 2044 Madison Avenue, Granite City, IL Drive 7.3 miles, 13 min

Gateway Regional - CLINIC - PRIMARY



2575 Kingshighway

East St Louis, IL 62201

- ↑ 1. Head north on Kingshighway toward Congress 32 s (0.3 mi)
- Take Collinsville Rd to IL-203 N 4 min (2.1 mi)
- ↙ 2. Turn left onto Maryland Ave 0.5 mi
- ↘ 3. Turn right onto N 45th St 266 ft
- ↙ 4. Turn left onto Collinsville Rd 1.5 mi
- Continue on IL-203 N to Granite City 6 min (4.1 mi)
- ↘ 5. Turn right onto IL-203 N 2.9 mi
- ↑ 6. Continue straight onto McCambridge Ave 0.4 mi
- ↑ 7. McCambridge Ave turns slightly right and becomes Edwardsville Rd 0.8 mi

<https://www.google.com/maps/dir/2575+Kingshighway,+East+St+Louis,+IL+62201/2044+Madison+Avenue,+Granite+City,+IL/@38.6758601,-90.1419879,13z/data=!3m1!1e3>



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AFTER HOURS MEDICAL CARE FACILITY

5/30/2018

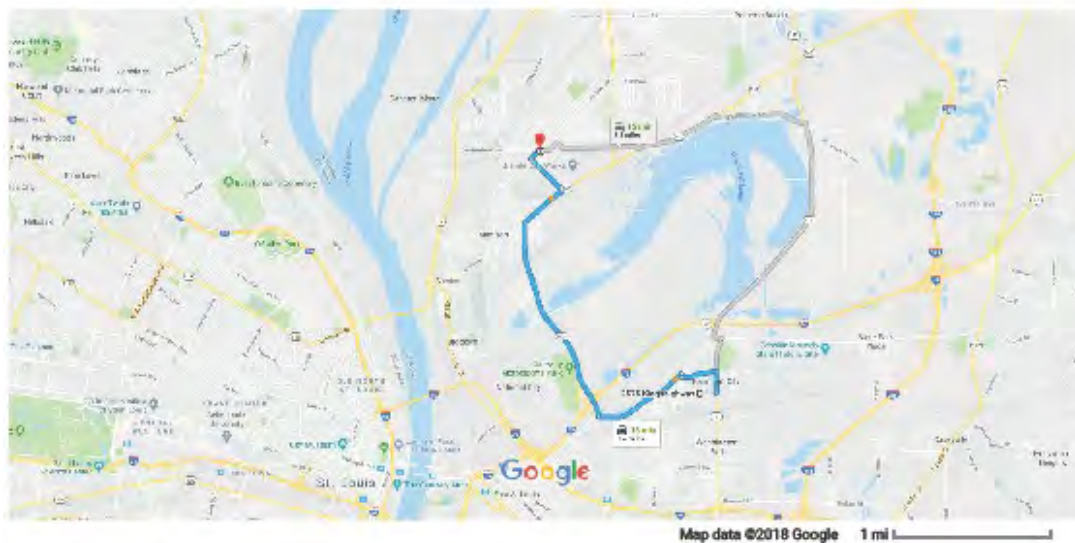
2575 Kingshighway, East St Louis, IL 62201 to Gateway Regional Medical Center - Google Maps



2575 Kingshighway, East St Louis, IL 62201 to
Gateway Regional Medical Center

Drive 7.4 miles, 13 min

After Hours Care



2575 Kingshighway

East St Louis, IL 62201

- ↑ 1. Head north on Kingshighway toward Congress 32 s (0.3 mi)

Take Collinsville Rd to IL-203 N

- ↙ 2. Turn left onto Maryland Ave 4 min (2.1 mi)
- ↘ 3. Turn right onto N 45th St 0.5 mi
- ↙ 4. Turn left onto Collinsville Rd 266 ft
- 1.5 mi

Continue on IL-203 N to Granite City

- ↘ 5. Turn right onto IL-203 N 6 min (4.1 mi)
- 2.9 mi
- ↑ 6. Continue straight onto McCambridge Ave 0.4 mi
- ↑ 7. McCambridge Ave turns slightly right and becomes Edwardsville Rd 0.8 mi

<https://www.google.com/maps/dir/2575+Kingshighway,+East+St+Louis,+IL+62201/Gateway+Regional+Medical+Center,+Madison+Avenue,+Granite+City,+IL/@38.67>



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Attachment C

Chemical Inventory List & Chemical Hazard Information

1. Gasoline
2. Diesel Fuel
3. Lubricating Grease
4. Motor oils
5. Hydraulic fluids
6. Power steering fluid
7. Brake fluid
8. Transmission fluid
9. Fertilizers
10. Insecticides
11. Insect repellants
12. Cleaners
13. Hand sanitizers
14. Disinfectants
15. Anti-freeze / Coolant
16. Dry chemical – Fire Extinguishers
17. Toilet Deodorizer
18. Antiseptics
19. Printer ink
20. Air freshener
21. Windshield washer fluid
22. Paint
23. DEF Fluid
24. Dust suppressant
25. Floor absorbent
26. Armor all protectant
27. Eye wash



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Right to Know Hazardous Substance Fact Sheet

**Emergency
Responders
Quick Reference**

Common Name: **LEAD**

Synonym: Metallic Lead

CAS No: 7439-92-1

Molecular Formula: Pb_2

RTK Substance No: 1096

Description: Heavy, soft, silvery-gray metal

HAZARD DATA		
Hazard Rating	Firefighting	Reactivity
4 - Health 0 - Fire 0 - Reactivity DOT#: UN 3077 ERG Guide #: 171 Hazard Class: 9 (Environmentally Hazardous Substance)	Extinguish fire using an agent suitable for type of surrounding fire. Lead itself does not burn. POISONOUS FUMES ARE PRODUCED IN FIRE, including Lead Oxides. Use water spray to keep fire-exposed containers cool.	Lead reacts violently with HYDROGEN PEROXIDE, AMMONIUM NITRATE, ZIRCONIUM, SODIUM AZIDE, SODIUM ACETYLIDE, and CHLORINE TRIFLUORIDE. Lead is not compatible with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE) and STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC).
SPILL/LEAKS		PHYSICAL PROPERTIES
Isolation Distance: 10 to 25 meters (30 to 80 feet) Use a HEPA-filter vacuum for clean-up. Toxic to aquatic organisms. Hazardous to the environment and persists in the environment.		Odor Threshold: No odor Flash Point: Not combustible LEL: N/A UEL: N/A Specific Gravity: 11.35 at 68°F (20°C) Vapor Pressure: 0 mm Hg at 68°F (20°C) Water Solubility: Insoluble Boiling Point: 3,164°F (1,740°C) Melting Point: 621.5°F (327.5°C)
EXPOSURE LIMITS		PROTECTIVE EQUIPMENT
OSHA: 0.05 mg/m ³ , 8-hr TWA NIOSH: 0.05 mg/m ³ , 10-hr TWA ACGIH: 0.05 mg/m ³ , 8-hr TWA IDLH LEVEL: 100 mg/m ³		Gloves: Nitrile, Latex, Rubber Coveralls: DuPont Tyvek® Boots: Latex, Butyl, Neoprene Respirator: <0.5 mg/m ³ - N100 >0.5 mg/m ³ - full facepiece APR with High Efficiency filters >50 mg/m ³ but ≤100 mg/m ³ Supplied Air
HEALTH EFFECTS		FIRST AID AND DECONTAMINATION
Eyes: Irritation Skin: No Information Acute: Headache, irritability, upset stomach, and weakness Chronic: <i>Lead</i> may cause lung, brain, stomach, and kidney cancer in humans. Metallic taste, colic, muscle cramps Damage to the nervous system		Remove the person from exposure. Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn. Remove contaminated clothing and wash contaminated skin with soap and water. Transfer to a medical facility.

September 2007




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Attachment D

Lead Hazard Safety Program


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**Site Health and Safety Plan
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LEAD HAZARD TRAINING COURSE OUTLINE

I. Federal OSHA Lead Construction Standard (29 CFR 1926.62)

A. Scope

1. All construction work involving exposure to lead, including:

- a) Demolition or salvage
- b) Removal or encapsulation of lead materials
- c) New construction
- d) Transportation, disposal, and storage of lead materials.
- e) Maintenance operations
- f) Lead contamination/emergency cleanup

B. Exposure Limits

1. The PEL is 50 micrograms of lead per cubic meter of air averaged over an 8-hour period.
2. The Action Level (AL) is 30 micrograms of lead per cubic meter of air averaged over an 8-hour period.
3. If respirators are used, actual exposures will be calculated by applying protection factor of respirator to air monitoring results.

C. Exposure Assessment

1. Employer must determine if lead exposures are at or above AL.
2. Exposure assessment will be made by collecting personal samples representative of a full shift for each job classification.
3. Until exposure assessment is completed, it will be assumed that worker exposures are >PEL but < 10 times PEL. Therefore, respirators and protective clothing will be worn during assessment period.
4. Workers will also receive baseline blood tests for lead and be provided with appropriate training, hand washing facilities, and change areas.
5. If exposure results are below AL, no further monitoring will be conducted unless site operations change.
6. If exposure results are above AL but below PEL, monitoring will be repeated every six months.
7. If exposure results are above PEL, monitoring will be repeated quarterly.

Within 5 working days after completion of exposure assessment, each worker will be informed in writing of their monitoring results.


D. Method of Compliance

1. The employer shall implement engineering and work practice controls, including administrative controls, to reduce and maintain employee exposure to lead to or below the permissible exposure limit to the extent that such controls are feasible.

E. Respiratory Protection

1. Respirators will be used whenever employee exposure to lead exceeds the PEL.
2. Employees who use respirators will be fit tested initially and 6 months thereafter.


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F. Protective Clothing and Equipment

- Employees will wear protective clothing in areas where exposures exceed the PEL. This clothing will be provided at no cost to the employee. Protective clothing will be properly removed, repaired, disposed of, and/or laundered.

G. Housekeeping

- All surfaces shall be maintained as free as practicable of accumulations of lead.
- Compressed air, by itself, shall not be used to remove lead from surfaces.

H. Hygiene Facilities and Practices

- In areas where lead exposure levels are above the PEL:
 - No food, beverage, or tobacco products will be allowed.
 - Workers must wash hands before leaving site.
 - Workers must change clothing in designated change areas
 - Where feasible, workers should also shower before leaving site.


I. Medical Surveillance

- Employees who are exposed to lead above AL for more that 30 days a year must participate in a medical monitoring program. Initial medical surveillance, consisting of blood lead testing, will also be made available to workers exposed at or above the AL.
- For lead exposure above AL for 30 days or more a year, biological monitoring must be conducted every 2 months or the first 6 months and every 6 months thereafter.
- Biological monitoring will be repeated every 2 months for workers who have blood lead levels at or above 40 micrograms per deciliter.
- For employees who are removed from exposure due to elevated blood lead levels (> 50 micrograms per deciliter), they will be re-tested within 2 weeks after receiving test results and every month thereafter during removal period.
- Employees will be notified of their blood level results within 5 days of receiving monitoring results.
- Employees whose blood levels exceed 40 micrograms per deciliter will be informed of the medical removal criteria of 50 micrograms per deciliter.
- Employees who are exposed to lead above its action level for 30 days or more per year and who have blood lead levels above 40 micrograms per deciliter, will be offered medical exams at least annually or whenever exposure symptoms appear.

J. Chelation

- The employer shall ensure that any person whom he retains, employs, supervises or controls does not engage in prophylactic chelation of any employee at any time.
- If therapeutic or diagnostic chelation is to be performed, the employer shall assure that it be done under the supervision of a licensed physician in a clinical setting.


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K. Medical Removal Protection

1. Employees who are exposed to lead above its action and who have blood lead levels at or above 50 micrograms per deciliter or who have a medical condition which places them at increased risk of health impairment from this exposure, will be removed from their lead exposure work.
2. Employees who were removed from work due to elevated blood lead levels will be returned to their job when tests indicate that their blood lead level is at or below 40 micrograms per deciliter.
3. Employees who are removed from their jobs for the reasons mentioned above or who are removed voluntarily will retain their normal earnings, seniority, and other employment rights and benefits during the time of their removal, up to a maximum of 8 months, provided by the employer.

L. Employee Information and Training

1. Prior to starting work, employees must be trained in the following topics:
 - a. Content of this standard
 - b. Site activities that could result in lead exposures above action level
 - c. Purpose, selection, fitting, use, and limitation of respirators
 - d. Description of medical surveillance program and health effects from lead exposure
 - e. Engineering and work practice controls
 - f. Contents of compliance plan
 - g. Chelating agent precautions
 - h. Employee rights to records and information

M. Signs

1. Lead warning signs must be posted at the job site.

N. Recordkeeping

1. Detailed exposure monitoring and medical surveillance records will be maintained on each employee covered by these requirements. These records will be maintained by the employer for 30 years and will be made available to the employee upon request.

II. Respirator Usage
A. Purpose

1. Respirators will be worn to ensure that personnel exposures to lead do not exceed permissible exposure limits during the eight hour work shift. The use of respirators will be discontinued if it can be shown through personal exposure monitoring that airborne lead levels are below permissible limits. Respiratory protection will also be provided to employees who request it.


B. Selection

Full-face air purifying respirators equipped with P100 dust cartridges will be worn during those phases of work requiring the use of respiratory protection. This respiratory equipment will protect workers from excess exposures up to a maximum lead dust level of 2500 micrograms per cubic meter of air. Only National Institute for Occupational Safety and Health (NIOSH) approved respirators will be used and each user will be given a respirator of a size and brand that fits well and operates properly. Each user will be fit-tested using irritant smoke to ensure a proper fit.



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If dust conditions require an upgrade of respiratory protection, respirators with higher protection factors will be selected as per Table 1 of WAS 296-155-17613 and issued to site workers.

C. Fitting

Each employee will be fit-tested in their respiratory protective equipment using irritant smoke prior to starting work. A record of their fit-test results will be maintained at the job site. This fit-test will be repeated for each new brand, size, and type of respirator used and whenever conditions change that could alter the fit of the respirator. All employees must be clean shaven when wearing a respirator.

D. Use

Respirators will be worn in all controlled work areas where lead dust levels exceed an airborne concentration of 50 micrograms per cubic meter of air. Respirators will be cleaned and disinfected at the end of each shift and placed in plastic bags for storage. Respirators are not to be taken off in controlled work areas nor are they to be placed on contaminated surfaces. A negative pressure check must be conducted on the respirator each time it is worn. Prior to donning this equipment, the respirator must be inspected to ensure it is clean, in good condition and is in working order. Cartridges must be replaced at the end of each shift or whenever breathing resistance through the cartridges becomes too difficult.

E. Limitations

Full-face air purifying respirators equipped with P100 cartridges are not to be worn in lead dust concentrations > 2500 micrograms per cubic meter or in oxygen deficient atmospheres (< 19.5% O₂). Proper face-piece seal is critical; therefore, all employees wearing respiratory protective equipment must be clean shaven. Medical approval is required to wear a respirator and a record of such will be kept at the job site. As mentioned above, cartridges must be replaced at the end of each shift or whenever breathing becomes difficult. Equipment must be inspected before and after each use.

III. Medical Surveillance

Each employee working in controlled work areas will be required to complete an annual medical exam consisting of a history, physical exam, and laboratory tests to ensure fitness for duty. Blood lead evaluations will also be required for participation in this project. In addition, exposure monitoring will be conducted on representative site workers to evaluate compliance with required exposure limits. Test results will be maintained by Environmental Restoration LLC for a minimum of 30 years. Copies of these test results will be available to each employee upon request.

If blood lead results exceed 50 micrograms per deciliter or if medical exam results identify a condition that would pose an unacceptable risk of injury to the employee from exposure to lead, the employee will be removed from lead exposure activities as per 29 CFR 1926.62(k). If chelation therapy is required to ameliorate high blood lead levels, this treatment will only be conducted under the direction of a licensed physician.


IV. Engineering Controls and Work Practices

Work will be conducted in accordance with the work plans for this project. The HASP describes the engineering and work practice controls that will be used to eliminate or reduce the risk of injuries during all phases of work. All site employees will be required to review and sign this document before starting work.



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The main lead exposure hazard associated with this project consists of breathing lead- contaminated dust that may become airborne when the soils on site are excavated. Lead exposures can also occur if lead contamination gets into your mouth and is swallowed, such as when one handles food, cigarettes, chewing tobacco, or make-up that has lead on them or when one handles these items with hands contaminated with lead.

Personal lead exposures will be controlled through the use of PPE (protective clothing and respirators) and through proper decontamination practices. Efforts will also be made during excavation to control dust emissions by using water spray to knock down dust.


V. Health Effects from Toxic Exposures

Lead is a potent, systemic poison that affects a variety of organ systems, including the nervous system, kidneys, reproductive system, blood formation, and gastrointestinal system. The most important way lead enters the body is through inhalation, but it can also be ingested when lead dust or unwashed hands contaminate food, drink, or cigarettes. Much of ingested lead passes through feces without absorption into the body. Adults may absorb only 2 to 15 percent of ingested lead; children may absorb a much larger fraction. Once in the body, lead enters the bloodstream and circulates to various organs. Lead concentrates and remains in bone for many years. The amount of lead the body stores increases as exposure continues, with possibly cumulative effects. Depending on the dose entering the body, lead can be deadly within several days or affect health after many years. Very high doses can cause brain damage (encephalopathy). Lead may aggravate nervous system disorders (e.g. epilepsy, neuropathies), kidney diseases, high blood pressure, infertility, and anemia. Lead-induced anemia and its effect on blood pressure can aggravate cardiovascular disease.

An acute, short-term dose of lead could cause acute encephalopathy with seizures, coma, and death. However, short-term exposures of this magnitude are rare. Reversible kidney damage, as well as anemia, can occur from acute exposure.

Symptoms of chronic, long-term overexposure include appetite loss, nausea, metallic taste in the mouth, lead line on gingival tissue, constipation, anxiety, anemia, pallor of the face and the eye grounds, excessive tiredness, weakness, insomnia, headache, nervous irritability, fine tremors, numbness, muscle and joint pain, and colic accompanied by severe abdominal pain. Paralysis of wrist and, less often, ankle extensor muscles may occur after years of increased lead absorption. Kidney disease may also result from chronic overexposure, but few, if any, symptoms appear until severe kidney damage has occurred. Reproductive damage is characterized by decreased sex drive, impotence, and sterility in men; and decreased fertility, abnormal menstrual cycles, and miscarriages in women. Unborn children may suffer neurologic damage or developmental problems due to excessive lead exposure in pregnant women. Lead poisoning's severest result is encephalopathy manifested by severe headache, convulsions, coma, delirium, and possibly death.


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LEAD HAZARDS TRAINING
COMPLETION RECORD

NAME: _____ **SS #:** _____
 (Please print)


1. I have been informed about the health hazards associated with exposure to inorganic lead.
2. I have been informed about the types of work that may result in exposure to lead, and the necessary protective steps to prevent exposure, including engineering controls and safe work practices.
3. I understand the purpose for proper selection, use, and limitations of the respirators and protective equipment or clothing that will be required for this project.
4. I understand the purpose for good housekeeping and personal hygiene practices to prevent exposure to others.
5. I have been informed about the medical surveillance and medical removal protection program requirements associated with this project.
6. I have reviewed and signed the Site-Specific Health and Safety Plan which describes the health hazard controls that will be used to comply with the requirements of Federal OSHA's Lead Construction Standard for this project.
7. I have received of copy of Federal OSHA's Lead Construction Standard 29 CFR 1926.62 and have been informed of its contents.
8. I understand that chelating agents should not be used routinely to treat lead exposures.

SIGNATURE: _____ **DATE:** _____



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Lead Project Air Monitoring Requirements

Personal Air Monitoring

Personal Air Monitoring is used to evaluate the level of contaminants in the breathing zone of workers. Personal Air Monitoring data is required to determine proper respiratory protection and to justify allowing work without a respirator. All personal air monitoring will be scheduled through Nick Michailides. Only Lonnie has the right to waive or alter the frequency of personal air monitoring. If deviations are granted they must be reported to the Management Committee.

Initial Personal Air Monitoring Requirements

Personal air monitoring must be conducted at the start up of every site for a two day period. This sampling event shall collect personal (breathing zone) samples representative of a full shift including at least one sample for each job classification (i.e. Labor, equipment operator, truck driver, etc.) in each work area either for each shift or for the shift with the highest exposure level.

Ongoing Project Personal Air Monitoring Requirements

A single day (full shift) air monitoring event, again carried out on each job classification, will be conducted every 60 days until project completion.

Changed Site Conditions Personal Air Monitoring Requirements

Personal air monitoring is used to determine worker exposure during daily, regular operations. When site conditions change the initial sampling episode may no longer be representative of a workers exposure. Personal sampling is required when site operations have been changed and the potential for worker exposure has changed.

It is the RM's and Site Health and Safety Officer's responsibility to notify Nick Michailides if and when any such change occurs. This notification should occur prior to initiating the work. Nick Michailides will then be responsible for developing and scheduling an air monitoring event that coincides with site work.


Air Sampling Data Management

All data air sampling will be included in the job files and the Health and Safety department files (Nick Michailides).



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Lead Project Blood Lead/ZPP Testing Requirements

Worker Blood Lead/ZPP

Initial Blood Analysis Requirements;

All employees will receive an Initial Blood Lead/ZPP Analysis when assigned to any lead site. The Blood lead/ZPP should be taken prior to mobilization. If this option is not available, the blood lead/ZPP analysis must occur within 5 days of the employee arriving onsite. This applies to all employees regardless of length of assignment. If they are only onsite for 1 hour, they will need this initial blood lead. Nick Michailides is the only individual that is capable of waiving this requirement. Any such waiving of the requirement, and the reasoning behind it, must be disclosed to all managers via e-mail.

It is the PM's responsibility to ensure workers have received their blood sampling prior to, or within 5 days of mobilization. Lonnie can assist in locating local medical clinics for the projects.

Ongoing Blood Analysis Requirements:

All ongoing projects will conduct worker blood lead/ZPP sampling / analysis every 90 calendar days. This 90 day sample episode may be skipped if project demobilization is scheduled for less than 30 day from the 90 day sample date. *As example if the 90 day sample episode is scheduled for May 15, but staff demobilization is occurring June 10, the 90 day sampling can be skipped and replaced with Exit Blood Lead/ZPP Sampling.*


Exit Blood Analysis Requirements

At the end of a workers assignment on a job, an Exit Blood Lead/ZPP Analysis must be run unless the employee has been onsite less than 30 days and working in an area where the Action Level, (as documented by Personnel Air Monitoring Data specific to the site), has not been achieved. If you can't prove the employee was working in conditions below the Action Level using data from your site, you must have exit blood lead/ZPP analysis run for the employee regardless of their duration onsite.

Blood Lead/ZPP Data Management

All data for blood lead/ZPP data will be included in the job files and the Health and Safety department files (Nick Michailides).


**ENVIRONMENTAL
RESTORATION, LLC**
**Site Health and Safety Plan
Old American Zinc Plant Superfund Site**

	Employee Health and Safety Policy Manual	Procedure #:	HS-48
		Page:	9 of 9
	Subject: Lead Hazard Safety Program	Revision:	01
		Issue Date:	January 26, 2011

Lead		CAS 7439-92-1		
Pb		RTECS OF7525000		
Synonyms & Trade Names Lead metal, Plumbum		DOT ID & Guide		
Exposure Limits	NIOSH REL*: TWA 0.050 mg/m ³ See Appendix C [*Note: The REL also applies to other lead compounds (as Pb)]			
	OSHA PEL*: [1910.1025] TWA 0.050 mg/m ³ [*Note: The PEL also applies to other lead compounds (as Pb)]			
IDLH 100 mg/m ³ (as Pb)		Conversion		
Physical Description: A heavy, ductile, soft, gray solid.				
MW: 207.2		BP: 3164°F	MLT: 621°F	Sol: Insoluble
VP: 0 mmHg (approx)		IP: NA		Sp.Gr: 11.34
F.I.P: NA		UEL: NA	LEL: NA	
Noncombustible Solid in bulk form.				
Incompatibilities & Reactivities: Strong oxidizers, hydrogen peroxide, acids				
Measurement Methods: NIOSH 7082 , 7105 , 7300 , 7301 , 7303 , 7700 , 7701 , 7702 , 9100 , 9102 , 9105 ; OSHA ID121 , ID125G , ID206				
Personal Protection & Sanitation		First Aid		
Skin: Prevent skin contact		Eye: Irrigate immediately		
Eyes: Prevent eye contact		Skin: Soap flush promptly		
Wash skin: Daily		Breathing: Respiratory support		
Remove: When wet or contaminated		Swallow: Medical attention immediately		
Change: Daily				
Respirator Recommendations				
Up to 0.5 mg/m ³ : (APF = 10) Any air-purifying respirator with an N100, R100, or P100 filter (including N100, R100, and P100 filtering facepieces) except quarter-mask respirators. Click here for information on selection of N, R, or P filters.				
(APF = 10) Any supplied-air respirator				
Up to 1.25 mg/m ³ :				
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode				
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter				
Up to 2.5 mg/m ³ :				
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter. Click here for information on selection of N, R, or P filters.				
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode				
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter				
(APF = 50) Any self-contained breathing apparatus with a full facepiece				
(APF = 50) Any supplied-air respirator with a full facepiece				
Up to 50 mg/m ³ : (APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode				
Up to 100 mg/m ³ : (APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode				
Emergency or planned entry into unknown concentrations or IDLH conditions:				
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode				
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus				
Escape: (APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.				
Exposure Routes inhalation, ingestion, skin and/or eye contact				
Symptoms Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypotension				
Target Organs Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue				



**ENVIRONMENTAL
RESTORATION, LLC**

**Site Health and Safety Plan
Old American Zinc Plant Superfund Site**

Attachment Z

Site Specific Training Record



**ENVIRONMENTAL
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**Site Health and Safety Plan
Old American Zinc Plant Superfund Site**

Site Specific Training Record

This is to advise that _____ conducted a Site-Specific Training
(Instructor's name)
course for _____ a
t the _____
(Company Name)
_____ project on _____
(TO #, Project Name)
(Date)

The total duration of the instructions was _____ hours.

Instruction covered the topics checked off below:

- Site Location, Description and History ☐
- Potential site hazards (chemical, physical, and biological) ☐
- Chemical, physical, and toxicological properties of site contaminants ☐
- Safe work practices ☐
- Training requirements ☐
- Medical Surveillance ☐
- Control Zones ☐
- Monitoring ☐
- Selection, use, and limitation, of personal protective equipment ☐
- Personnel and equipment decontamination ☐
- Emergency response procedures ☐
- Hazard communication ☐
- Blood borne pathogen briefing ☐

The following participant attended the training course for the full duration indicated above.

Name (Print)

Signature

Automated External Defibrillator Management Program for Old American Zinc Plant Superfund Site and Surrounding Properties

Prepared by:



**400 Aviation Drive
Mt. Vernon, IL 62864**

1.0 Introduction

This Automated External Defibrillator (AED) Management Program has been prepared by ARDL, Inc. (ARDL), Mt. Vernon, Illinois, for use by ARDL, Subcontractors, US Environmental Protection Agency (USEPA), and US Army Corps of Engineers (USACE) personnel participating in project activities associated with the Old American Zinc Plant (OAZ) Superfund Site Surrounding Properties and Remedial Design (RD). All personnel are expected to comply with requirements contained herein. No personnel shall use the AED without proper certification and authority from the Site Safety and Health Officer (SSHO).

2.0 Purpose

ARDL is committed to the safety of all personnel and visitors at the OAZ site. The purposes of the AED management program are: to ensure that the AED(s) on-site are properly maintained and readily available to deliver potentially lifesaving defibrillation to victims of Sudden Cardiac Arrest (SCA); and to ensure that the use of AED(s) are limited to certified personnel. SCA is a condition in which the heart suddenly and unexpectedly stops beating, stopping blood flow to the brain and other vital organs. SCA usually causes death if not treated within minutes. AEDs are intended to provide a bridge during the critical minutes between onset of SCA and arrival of Emergency Medical Services (EMS) personnel. An AED is a Food and Drug Administration (FDA) approved medical device that can recognize the presence or absence of ventricular fibrillation or rapid ventricular tachycardia and is capable of determining, without intervention by an operator, whether defibrillation should be performed. Upon determining that defibrillation should be performed, the AED automatically charges and requests delivery of an electrical impulse to an individual's heart. Between AED defibrillation and charging Cardiopulmonary Resuscitation (CPR) will be performed. CPR is a procedure to support and maintain breathing and circulation for a person who has stopped breathing (respiratory arrest) and/or whose heart has stopped (cardiac arrest).

3.0 Duties and Responsibilities

AED Coordinator – Chris Creps, the ARDL SSHO, will be the AED Coordinator. The AED Coordinator shall be responsible for the following tasks:

- Provide guidance, monitoring, and periodic re-evaluation for this program.
- Provide oversight and technical assistance to anyone in use of an AED.
- Maintain an inventory of AEDs and their locations.
- Inform emergency services of the location of any AEDs on-site.
- Conduct and document semi-annual and annual inspections to verify that personnel are in compliance with this program.
- Act as a liaison between ARDL and AED manufacturers to assist with AED maintenance and compliance issues.
- Maintain an AED Self-Readiness Check Sheet for each AED, indicate date each AED is checked, and the initials of the person who performs the status check.
- Maintain inspection records and AED tracking database.
- Ensure operation and maintenance of each AED in complete accordance with regulatory requirements, manufacturers' recommendations, and this program.
- Place the AED in a conspicuous and unobstructed location that is conducive to rapid access by responders.
- Notify personnel of AED location(s).
- Purchase and replace batteries, pads, and other supplies as needed.

In Case of an Emergency: When on-site personnel are notified of a medical emergency, they should call the appropriate emergency number to report the emergency:

Police:	618-274-4504
Fire:	618-274-4504
Ambulance:	618-337-1956

The caller should provide authorities with the following information:

- Type of emergency
- Physical street address of site
- Location of emergency
- Phone number they are calling from
- Further information as requested

Someone should meet and direct emergency responders to the incident location.

4.0 Returning AED to Service after Use

The following activities will need to be completed to return the unit to service:

- Check and replenish supplies as appropriate.
- Clean and disinfect the device.
- Check the device and housing for cracks or other damage.
- Return the AED to its designated location with appropriate supplies.

5.0 Forms

See AED Monthly Self-Readiness Check Sheet below.

AED Monthly Self-Readiness Check Sheet

MODEL #		SERIAL #	
MANUFACTURER		LOCATION	

YEAR	DATE	CONDITION	*BATTERY	PADS EXPIRATION	**PADS SEALED	INITIALS
Sample	5/21/18	Good	✓	6/10/2019	✓	
JAN						
FEB						
MAR						
APR						
MAY						
JUN						
JUL						
AUG						
SEP						
OCT						
NOV						
DEC						

* Does AED indicate that unit is ready for use, i.e. Green ✓.

** Visually inspect package for expiration date and no damage to package.

Initials	Printed Name	Signature

Access/Haul Road Plan for Old American Zinc Plant Superfund Site and Surrounding Properties

Prepared by:



**400 Aviation Drive
Mt. Vernon, IL 62864**

Introduction

This Access and Haul Road Plan has been prepared by ARDL, Inc. (ARDL), Mt. Vernon, Illinois, for use by ARDL, Subcontractors, US Environmental Protection Agency (USEPA), and US Army Corps of Engineers (USACE) personnel participating in project activities associated with the Old American Zinc Plant (OAZ) Superfund Site Surrounding Properties and Remedial Design (RD). All personnel are expected to comply with the requirements contained herein.

General

Improvements at the site include the installation of a new gate at the site access entry from Cookson Road, the addition of clean stone to intra-site haul roads, and the establishment of a decontamination area.

Site Access Entry Points

Personnel access to the Facility Area (FA) will be through the Kingshighway (east gate) entrance. Parking will be located near the office trailers, behind the existing XTRA facility. The current on-site access road will be utilized and improved with the addition of clean stone. The east gate access will allow personnel to enter the FA without interacting with hauling and disposal operations. ARDL will replace the gate at the west entrance to establish an improved site security. Trees and vegetation will be grubbed from the site access area as necessary, and best management practices will be installed per the Stormwater Pollution Prevention Plan (SWPPP) for the OAZ Project. Hauling operations have the potential to impact public traffic on Cookson Road. ARDL will deploy flaggers and signage, as necessary, to manage the interaction between heavy equipment and vehicles traveling on Cookson Road.

Improvements to Existing Site Access Entry Point

The existing west site access entry point will be used as the site access/egress for heavy trucks hauling materials to and from the site. ARDL will improve the access point as necessary to facilitate hauling operations and minimize track-out onto Cookson Road. Additionally, truck tires may be brushed or washed at the decontamination area to remove earthen materials. If any material is tracked onto Cookson Road, it will be brushed or swept.

Improvements/Construction of Intra-Site Roads

Activities will require improvements to existing roads within the site. This section addresses specific design and operational considerations associated with intra-site roads. One intra-site road is the FA access road. This road will be used primarily for the transportation of contaminated soil on-site, and the transportation of clean materials off-site. Design and operational considerations for intra-site roads are as follows:

- **Equipment usage, traffic density and patterns, right of way rules, and hours of operation.**
 - The transportation access road will be used primarily for haul trucks transporting material to the FA for placement in the contaminated stockpile staging area, or from the clean material staging area for placement at remediated properties. This road also will be used for equipment and material delivery. The frequency of deliveries is highly variable and will be interspersed throughout the period of performance. Trucks will access the site through the west gate, and the access road will accommodate two-way traffic. Truck turn-around areas are located at both stockpile staging areas and the decontamination area. There is a fork in the access road at the decontamination area. When entering the site from the west gate, trucks hauling contaminated materials will veer to the left at the fork and trucks hauling clean materials will veer to the right.
- **Sign and signal person requirements, and traffic control devices.**
 - Due to favorable sighting distances and low traffic density, there are no signal person requirements for trucks exiting the site on the transportation access road. No traffic control devices will be required, but a stop sign will be located at the west end of the road for traffic exiting the site onto Cookson Road. Flaggers may be used to manage exiting traffic, as needed.
- **Drainage controls.**
 - The material composition of the transportation access road is gravel. The need for drainage controls and road repairs will be evaluated upon mobilization to the site and will comply with the Storm-water Pollution Prevention Plan (SWPPP). The cross-section profile of the road will be crowned such that water drains off the haul road.

- **Points of contact between vehicles and the public, vehicles and pedestrians, and safety controls at these points.**
 - Interfaces with project vehicles, waste haul trucks, and delivery trucks may occur at the intersection of the site entrance and Cookson Road. Safety controls will consist of warning signs posted 500 feet from the site entrance stating “trucks entering highway” any time site traffic is active.
 - The haul roads will be routed such that interfaces with other vehicles and pedestrians are minimized.
- **Maintenance requirements, including roadway hardness and smoothness and dust control.**
 - The transportation access road is currently gravel. The road will be topped with clean gravel to construct a clean roadway for truck traffic. The roadway is located within the support zone and will be maintained clean. As needed, dry sweeping or removal of gravel will be performed to remove accumulated soil.
 - If needed, on-site haul roads will be constructed of compacted gravel base and maintained by periodically re-grading the surface as required. Dust control of the haul road will be accomplished by applying water as needed by water trucks traversing the roadway.

Access and Haul Road Plan Map



Tree Felling And Maintenance Program for Old American Zinc Plant Superfund Site and Surrounding Properties

Prepared by:



**400 Aviation Drive
Mt. Vernon, IL 62864**

Introduction

This Tree Felling and Maintenance Program (TFMP) has been prepared by ARDL, Inc. (ARDL), Mt. Vernon, Illinois, for use by ARDL, Subcontractors, US Environmental Protection Agency (USEPA), and US Army Corps of Engineers (USACE) personnel participating in project activities associated with the Old American Zinc Plant (OAZ) Superfund Site Surrounding Properties and Remedial Design (RD). All personnel are expected to comply with the requirements contained herein.

Chainsaw/Tree Felling

Work involving tree felling and/or the use of a chainsaw must be completed by personnel adequately trained for their respective responsibilities and qualified to safely complete their assigned task(s). Tree felling operations will be in accordance with the OSHA standard 1910.266, the EM385-1-1, and any other applicable OSHA safety standards. The safety requirements for tree felling and work involving chainsaws may include, but not be limited to, the following:

1. Each chainsaw operator shall always wear ALL required personal protective equipment (PPE). Minimum PPE to be worn will include:
 - a. Hard hat
 - b. Safety glasses
 - c. Face shield
 - d. Hearing protection
 - e. Work gloves
 - f. Pants
 - g. Safety chaps
 - h. High visibility clothing
 - i. Steel toed boots
2. All equipment, including chainsaws and PPE, shall be maintained and inspected before each use.
3. The chain saw shall be operated in accordance with the manufacturer's instructions.
4. Chainsaws will be equipped with a chain brake which shall not be removed or otherwise disabled.
5. Each gasoline-powered chain saw shall be equipped with a continuous pressure throttle control system which will stop the chain when pressure on the throttle is released.
6. Identify jobsite hazards, locate all obstacles trees may fall on, and plan your work to safely mitigate these hazards and obstacles. This process must be repeated as often as necessary as work areas and conditions change.
7. No personnel shall work within an area of twice the height of a tree being cut.
8. Assess the tree for height, weight distribution, lean, and any hazards in the tree.
9. Once a safe direction of fall is picked, clear your escape route at roughly a 45-degree angle away from the direction of fall.
10. Make sure your escape route is clear and free of tripping hazards.
11. Chain saws must be operated, when possible, away from the vicinity of the legs and feet.
12. Employ natural barriers, where possible, such as limbs between the saw and the body.
13. Ensure proper balance when operating a chainsaw.
14. The preferred position for work with a chainsaw is on the uphill side of work.
15. When necessary to prevent rolling, logs must be blocked with wood or other suitable material.
16. Trees, segments of trees, limbs or saplings under stress or tension due to pressure or weight of another object must be considered hazardous.
17. Appropriate cutting techniques must be followed. Never cut above shoulder height.
18. Workers must be aware of the other's location and activity.

Brush Removal and Chipping

Work involving brush removal and/or the use of a chipper must be completed by personnel adequately trained for their respective responsibilities and qualified to safely complete their assigned task(s). Brush removal and chipping operations will be in accordance with the EM385-1-1 and any applicable OSHA safety standards. The safety requirements for brush removal and chipping may include, but not be limited to, the following:

1. Personnel operation a chipper or removing brush shall always wear ALL required personal protective equipment (PPE). Minimum PPE to be worn will include:
 - a. Hard hat
 - b. Safety glasses
 - c. Face shield
 - d. Hearing protection
 - e. Work gloves
 - f. Pants
 - g. Safety chaps
 - h. High visibility clothing
 - i. Steel toed boots
2. Brush and logs must not be allowed to create hazards in the work areas.
3. Use extreme caution when feeding wood or brush into a chipper.
4. Chippers must be operated a safe distance from all other personnel.
5. The brush chipper discharge chute or cutter housing cover must not be raised or removed while any part of the chipper is turning or moving.
6. Chippers must not be used unless a discharge chute of sufficient length or design is provided that prevents personal contact with the blades.
7. Foreign material, such as stones, nails, sweepings, and rakings, must not be fed into chippers.
8. Loose clothing must not be worn while operating chippers.
9. Hands or other parts of the body must not be placed into the in-feed hopper.
10. Leaning into or pushing material into in feed hoppers with feet is prohibited.
11. Training must be provided in the proper operating procedures for the chipper being used.
12. Maintenance must be performed only by those authorized by the employer and trained to perform such operations.
13. All chippers shall be operated in accordance with the manufacturer's instructions.